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SCIENCE FICTION

February 1969
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by
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To Jorslem
by
ROBERT
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Our Binary
Brothers
by
AMES BLISH

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WILLY LEY

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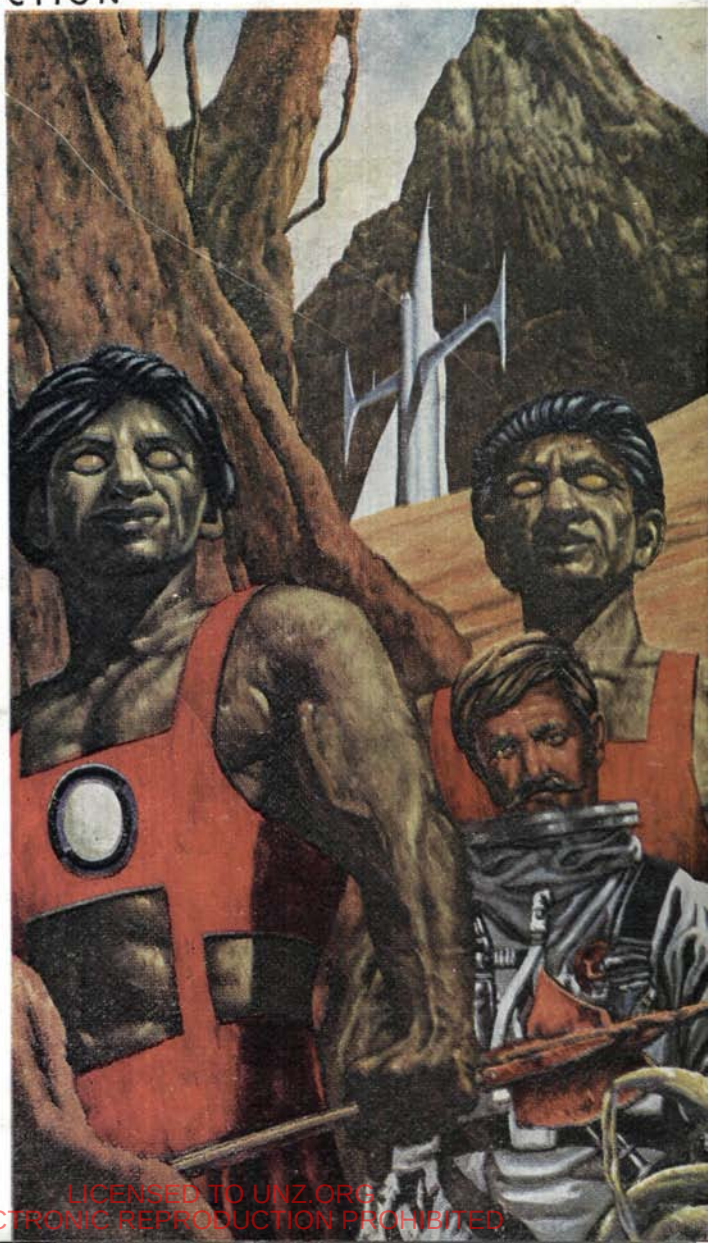
ALGIS
BUDRYS

*

. . . and
many
others



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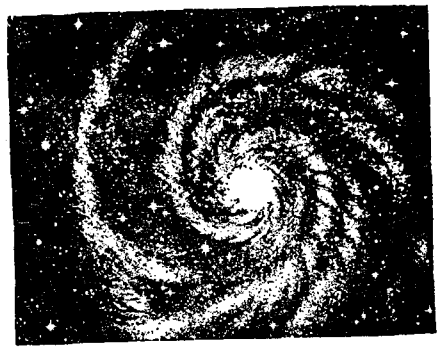

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GALAXY MAGAZINE is published monthly by Galaxy Publishing Corporation. Main offices: 421 Hudson Street, New York, N.Y. 10014. 60¢ per copy Subscription: (12 copies) $6.00 in the United States, Canada, Mexico, South and Central America and U. S. Possessions. Elsewhere $7.00. Second-class postage paid at New York, N.Y. and at additional mailing offices.

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By The Guinn Co., Inc. N.Y.
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Traps or Truths

Some two centuries ago, a couple of mathematicians were corresponding about their favorite subject, the intrinsic properties of numbers. Said Goldbach to Euler: I conjecture, though I have not been able to prove, that every even number can be written as the sum of two primes. Said Euler to Goldbach: Well, you may be right. Anyway, every even number I've tried it on is just the way you said it would be. But where's the proof?

Two hundred years later the proof is still missing — though a Norwegian named Brun, around the time of the first World War, did manage to prove that every even number could be written as the sum of nine primes, and a Russian named Vinogradof, in 1937, proved that every sufficiently large *odd* number could be written as the sum of *three* primes. (The stickler is that Vinogradof could not say just what the term "sufficiently large" meant.) The question still is not closed. And there's hardly a mathematician alive, or for that matter dead in the last couple centuries, who hasn't spent at least an afternoon, sometimes years, trying to prove whether Goldbach's famous conjecture is right or wrong. Proving it was wrong would be easy — all you'd need to do would be to find one exception. Proving it right is a lot harder, in principle; but as a matter of fact no one has.

You might want to put in a little time of your own on it. It's easy to see that the first even number 2, can be written as the sum of 1 and 1, both primes; 4 can be written as 2 plus 2; 6 as 5 plus 1, 8 as 7 plus 1, 10 as 7 plus 3 . . . etc. You needn't bother with those small numbers; every even number up to 10,000 has already been studied, and all of them, true enough, can be written as the sum of two primes. But what about 10,002? Or 14,137,066.

There is something vaguely troubling about that sort of problem, and that is that there's a sort of unsettling appearance of an injection of language hang-ups into a non-language problem. Take that word "even." Many writers have spent many words discussing the unique position of the number 2 as "the only even prime." Is there really anything unique about it? "Even," after all, means only "divisible by two." Wouldn't it be just as sensible to say that 3 is unique in that it is the only prime divisible by three?

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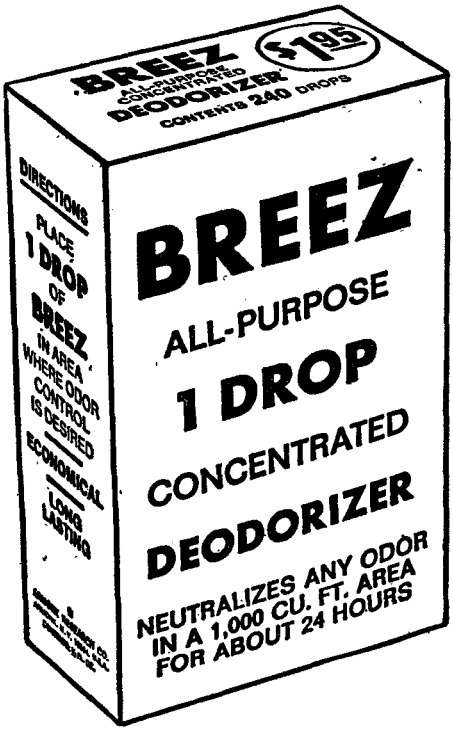

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We have a pet conjecture of our own, which we've been wasting a lot of scratch-paper trying to test out. It's a generalization of Goldbach's notion, and at least at first glance it seems to us to be as difficult to prove or disprove as Goldbach's own. Goldbach says that any number which has the prime 2 as a factor (that is, any even number) can be written as the sum of 2 primes. The generalization says that any number which has any given prime p as a factor (p being 3, 5, 7, 11, 13, 17 — whatever you will) can be written as the sum of that many primes. The number 6, for instance, has the prime 33, as a factor, and can be written as 3 plus 2 plus 1. The number 46 has the prime 23 as a factor, and can be written as 1 plus 2 plus 3. (As well as in several other ways.)

It would be interesting to know whether this particular conjecture is true or false, and anybody with a lot of spare time, or anybody with a computer with spare time, is cordially invited to try to find a number which doesn't have these characteristics and to let us know about it. For one thing, it might be easier to prove the generalization of Goldbach's theorem than its special case; and think of all the millions of mathematical man-hours we could save just by doing that.

For another, it might cast a little heeded light on just how many of our famous "insoluble" problems are resisting solution more because of language difficulties than because of their own merits.

Mathematical problems? Yes, but we weren't thinking of *just* mathematical problems. As Korzybski and Hayakawa have been telling us for some decades, and as McLuhan may (or may not) be telling us now, the language in which we attempt to state our problems is quite capable of baffling our attempts to solve them. We do have a sort of egocentric tendency to assume that the fact that we have devised a word must necessarily indicate that there is something that the word means. When the words that get in our way are "odd" and "even," perhaps it is merely an annoyance that they shape our thinking in ways that defeat our purposes. But when the words are "freedom" and "democracy" and "national honor" perhaps the consequences are graver than that.

When Lemuel Gulliver visited the floating island of the Laputans, one of the far-out philosophers he met refused to speak at all. Any word, he held, can be

(*continueu on page* 194)

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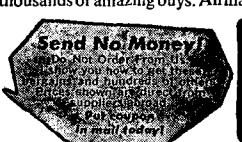

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TO JORSLEM

by ROBERT SILVERBERG

Illustrated by GAUGHAN

In the holy city of Jorslem
lay the one hope of Renewal.
But there was no end of duty
for a Watcher who had failed.

I

Our world was truly theirs, now. All the way across Eyrop I could see that, as I made my Pilgrimage toward holy Jorslem. The invaders had taken everything, and we belonged to them as beasts in a barnyard belong to the farmer.

They were everywhere. Some were sightseers, others were administrators; all had the look of masters. They walked with cool

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confidence, as if telling us that the will had drawn favor from us and conferred it upon them. They were not cruel to us, and yet they drained us of vitality by their mere presence among us. Our guilds became nothing. Our elaborate society was again without structure, as it had been in the chaos at the end of the Second Cycle. Our sun, our moons, our museums of ancient relics, our ruins of former cycles, our cities, our palaces, our future, our present and our past had all undergone a transfer of title.

At night the blaze of the stars mocked us. All the universe looked down on our shame.

The cold wind of winter told us that for our sins our freedom had been lost. The bright heat of summer told us that for our pride we had been humbled.

Through a changed world we moved, stripped of our past selves. I who was once of the Watchers who roved the stars four times each day now had lost that pleasure, for there was no more Watching to do. I had passed from that guild to join the Rememberers, but only for a while; and now, bound for Jorslem, I found cool comfort in the hope that as a Pilgrim I might gain redemption and renewal in that holy city. My traveling companion — the former Remembererer Olmayne — and I repeated each night the rituals of our Pilgrimage:

"We yield to the Will."

"We yield to the Will."

"In all things great and small."

"In all things great and small."

"And ask forgiveness."

"And ask forgiveness."

"For sins actual and potential."

"For sins actual and potential."

"And pray for understanding and repose."

"And pray for understanding and repose."

"Through all our days until redemption comes."

"Through all our days until redemption comes."

Thus we spoke the words. Saying them, we clutched the cool polished spheres of starstone, icy as frostflowers, that all Pilgrims carry, and made communion with the Will. And so we journeyed Jorslemward in this world that no longer was owned by man.

II

It was at the Talyan approach to Land Bridge that Olmayne first used her cruelty on me. Olmayne was cruel by first nature; and yet we had been Pilgrims together for many months, traveling from Perris eastward over the mountains and down the length of Talya to the bridge, and she had kept her claws sheathed. Until this place.

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The occasion was our halting for a company of invaders coming north from Afreek. There were perhaps twenty of them, tall and harsh-faced. They rode in a gleaming covered vehicle, long and narrow, with thick sand-colored treads and small windows. We could see the vehicle from far away, raising a cloud of dust as it neared us.

This was a hot time of year. The sky itself was the color of sand, and it was streaked with folded sheets of heat-radiation, glowing and terrible energy streams of turquoise and gold.

Perhap fifty of us stood beside the road, with the land of Talya at our backs and the continent of Afreek before us. We were a varied group: some Pilgrims, like Olmayne and myself, making the trek toward the holy city of Jorslem, but also I counted in the band five former Watchers — shorn of their profession, as I had been, by the conquest of Earth — and also several indexers, a Sentinel, a pair of Communicants, a Scribe and even a few Changelings. We gathered in a straggling assembly, awarding the road by default to the invaders.

Land Bridge is not wide, and the road will not allow many to use it at any time. Yet in normal times the flow of traffic had always gone in both directions at once. Here today, we feared to

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We have long brooded about a real fantasy publishing program, nudged along by, among other things, Jim Blish's enthusiasm for Cabell. Now, since our privately expanding universe permits two s.f.-cum-fantasy titles each month, plus an honest-to-God, no-holds-barred adult fantasy, we can indulge a long-cherished dream. (In order to avoid a tedious argument about definition of terms, let's not have one. An argument that is. A modest sample of the creative thinking we do here at Ballantine —it allows more time for reading.)

And such delicious reading: William Morris, Lord Dunsany, George MacDonald, (you'll love George— if you have not already encountered him—a sort of Bunyanesque Kafka), Hannes Bok, Clark Ashton Smith and many more. And of course Cabell. We'll be doing them all in the months to come, starting with Fletcher Pratt's THE BLUE STAR.

The series is being edited by Lin Carter, who will be doing Introductions for each volume. His own book, TOLKIEN: *A Look Behind "The Lord of the Rings,"* comes out in March, at 95c, and is aptly described on the cover as "A Joyous

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Exploration of Tolkien's Sources." And indeed, it is obvious that nothing delights Lin more than puttering about among heroic sagas, epics, Sumerian tablets, Norse runes, and the like. Fortunately for all, he makes his delight infectious.

With elves dogging every footstep, and faery coming out our ears, it is rather difficult to get back to the stern reality of science fiction. So let's not, for a bit. Among others titles which this non-generation-gap publisher is doing are Alan Watts' PSYCHOTHERAPY EAST AND WEST and Laing's POLITICS OF EXPERIENCE. Later we'll be doing an original on the meaning of MARCUSE — the German guru, (flowerkraut?) . . . O God. Back to immediacies.

We would really like you to know about a perfectly delightful collection of shorts from Miriam Allen deFord, titled XENOGENESIS, on the general theme of reproduction among extraterrestrials, and James White's stories, THE ALIENS AMONG US. Jim is the English writer (Scot, really) who writes as well about aliens as our own Hal Clement. Both books are March, both 75c each. All these titles, and many others, can be most rapidly obtained by ordering direct from our stockroom—send money and a list of what you want to Ballantine, Dept. GCS, 36 West 20th Street, New York, N.Y. Or better, send for a catalog so that you can make up a really long list. Spend money. Remember, the population bomb keeps ticking — or, as Paul Ehrlich says, as long as you've booked passage on the Titantic, you might as well go first class. BB

go forward while invaders were this close, and so we remained clustered timidly, watching our conquerors approach.

One of the Changelings moved toward me. He was small of stature for that breed, but wide through the shoulders; his skin seemed much too tight for his frame; his eyes were large and green-rimmed, his hair grew in thick, widely-spaced pedestal-like clumps, and his nose was barely perceptible, so that his nostrils appeared to sprout from his upper lip. Despite this, he was less grotesque than most Changelings appear. His expression was solemn, but with a hint of bizarre playfulness lurking somewhere.

He said in a voice that was little more than a feathery whisper, "Do you think we'll be delayed long, Pilgrim?"

In former times one did not address a Pilgrim unsolicitedly — especially if one happened to be a Changeling. Such customs meant nothing to me, but Olmayne drew back with a hiss of distaste.

I said, "We will wait here until our masters allow us to pass. Is there any choice?"

"None friend, none."

At that *friend,* Olmayne hissed again and glowered at the little Changeling. He turned to her, and his anger showed, for suddenly six parallel bands of scarlet

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pigment blazed beneath the glossy skin of his cheeks. But his only overt response to her was a courteous bow. He said, "I introduce myself. I am Bernalt, naturally guildless, a native of Nayrub in Deeper Afreek. I do not inquire after your names, Pilgrims. Are you bound for Jorslem?"

"Yes," I said, as Olmayne swung about to present her back. "And you? Home to Nayrub after travels?"

"No," said Bernalt. "I go to Jorslem also."

Instantly I felt cold and hostile, my initial response to the Changeling's suave charm fading at once. I had had a Changeling, false though he turned out to be, as a traveling companion before; he also had been charming, but I wanted no more like him. Edgily, distantly, I said, "May I ask what business a Changeling might have in Jorslem?"

He detected the chill in my tone, and his huge eyes registered sorrow. "We too are permitted to visit the holy city, I remind you. Even our kind. Do you fear that Changelings will once again seize the shrine of renewal, as we did a thousand years ago before we were cast down into guildlessness?" He laughed harshly. "I threaten no one, Pilgrim. I am hideous of face, but not dangerous. May the Will grant you what you seek, Pilgrim." He made a gesture of respect and went back to the other Changelings.

Olmayne spun around on me, furious.

"Why do you talk to such beastly creatures?"

"The man approached me. He was merely being friendly. We are all cast together here, Olmayne, and — "

"*Man. Man!* You call a Changeling a man?"

"They *are* human, Olmayne."

"Just barely. Tomis, I loathe such monsters. My flesh creeps to have them near me. If I could, I'd banish them from this world!"

"Where is the serene tolerance a Rememberer must cultivate?"

She flamed at the mockery in my voice. "We are not required to love Changelings, Tomis. They are one of the curses laid upon our planet — parodies of humanity, enemies of truth and beauty. I despise them!"

It was not a unique attitude. But I had no time to reproach Olmayne for her intolerance; the vehicle of the invaders was drawing near. I hoped we might resume our journey once it went by. It slowed and halted, however, and several of the invaders came out. They walked unhurriedly toward us, their long arms dangling like slack ropes.

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"Who is the leader here?" asked one of them.

No one replied.

The invader said impatiently, after a moment, "No leader? No leader? Very well, all of you, listen. The road must be cleared. A convoy is coming through. Go back to Palerm and wait until tomorrow."

"But I must be in Agupt by—" the Scribe began.

"Land Bridge is closed today," said the invader. "Go back to Palerm." His voice was calm.

The Scribe shivered, his jowls swinging, and said no more.

Several of the others by the side of the road looked as if they wished to protest. The Sentinel turned away and spat. A man who boldly wore the mask of the shattered guild of Defenders in his cheek clenched his fists and plainly fought back a surge of fury. The Changelings whispered to one another. Bernalt smiled bitterly at me, and shrugged.

Go back to Palerm? Waste a day's march in this heat? For what ?

The invader gestured casually, telling us to disperse.

Now it was that Olmayne was unkind to me. In a low voice she said, "Explain to them, Tomis, that you are in the pay of the Procurator of Perris, and they will let the two of us pass."

My shoulders sagged as if she had loaded ten years on me. "Why did you say such a thing?" I asked.

"It's hot. I'm tired. It's idiotic of them to send us back to Palerm."

"I agree. But I can do nothing. Why try to hurt me?"

"Does the truth hurt that much?"

"I am no collaborator, Olmayne."

She laughed. "You say that so well! But you are, Tomis, you are! You sold them documents—"

"To save the Prince, your lover," I reminded her.

"You dealt with the invaders, though."

"Stop it, Olmayne."

"Now you give me orders?"

"Olmayne — "

Go up to them, Tomis. Tell them who you are, make them let us go ahead."

"The convoys would run us down on the road. In any case, I have no influence with invaders. I am not the Procurator's man."

"I'll die before I go back to Palerm!"

"Traitor! Treacherous old fool! Coward!"

I pretended to ignore her, but I felt the fire of her words. There was no falsehood in them, only malice. I *had* dealt with the conquerors I had betrayed the guild that sheltered me, yet it was un-

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fair for her to reproach me with it. I had been trying only to save a man to whom I felt bound, a man moreover with whom she was in love. It was loathsome of Olmayne to tax me with treason now, to torment my conscience, merely because of a petty rage at the heat and dust of the road.

But this woman had coldly slain her own husband. Why should she not be malicious in trifles as well?

The invaders had their way; we abandoned the road and straggled back to Palerm, a dismal sizzling, sleepy town. That evening five Fliers, passing in formation overhead, took a fancy to the town and in the moonless night they came again and again through the sky, three men and two women, ghostly and slender and beautiful. I stood watching them for more than an hour. Their great shimmering wings scarcely hid the starlight; their pale angular bodies moved in graceful arcs, arms held pressed close to sides, legs together, backs gently curved. I had loved a Flier girl once, in a fashion, and the sight of those five stirred my memories and left me tingling with troublesome emotions.

The Fliers made their last pass and were gone. The false moons entered the sky soon afterward. I went into our hostelry then, and shortly Olmayne asked admittance to my room.

She looked contrite. She carried a squat octagonal flask of green wine, not a Talyan brew but something from an outworld, no doubt purchased at great price.

Will you forgive me, Tomis?" she asked. "Here. I know you like these wines."

"I would rather not have had those words before, and not have the wine now," I told her.

"My temper grows short in the heat. I'm sorry, Tomis. I said a stupid and tactless thing."

I forgave her, in hope of a smoother journey thereafter, and we drank most of the wine, and then she went to her room nearby to sleep.

For a long while I lay awake beneath a lash of guilt. In her impatience and wrath Olmayne had stung me at my vulnerable place; I was a betrayer of mankind. I wrestled with the issue almost to dawn.

— What had I done?

I had revealed to our conquerors where a certain document might be found.

— To whom did the document belong?

To the guild of Rememberers.

— Did the invaders have a moral right to the document?

It told of the shameful treatment they had had at the hands of our ancestors. It gave justifica-

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tion for the conquest of Earth.

— What, then, was wrong about giving it to them?

One does not aid one's conquerors, even when they are morally superior to one.

— Is a small treason a serious thing?

There are no small treasons.

In this unprofitable way I consumed the night. When the day brightened I rose and looked skyward and begged the Will to help me find redemption in the waters of the house of renewal in Jorslem. Then I went to awaken Olmayne.

III

Land Bridge was open on this day, and we joined the throng that was crossing over out of Talya into Afreek.

There are two main routes for Pilgrims from Eyrop to Jorslem. The northern route involves going through the Dark Lands east of Talya, taking the ferry at Stanbool, and skirting the western coast of the continent of Ais until Jorslem. But Olmayne had been to Stanbool to do research in the days when she was a Rememberer, and disliked the place; and so we took the southern route, across Land Bridge into Afreek, and along the shore of the great Lake Medit, through Agupt and up to Jorslem.

A true Pilgrim travels only by foot. It was not an idea that had much appeal to Olmayne, and though we walked a great deal, we rode whenever we could. She was shameless in commandeering transportation. Only two-days' walk out of Perris she had got us a ride from a rich Merchant bound for the coast; the man had no intention of sharing his sumptuous vehicle with anyone, but he could not resist the sensuality of Olmayne's deep, musical voice, even though it issued from the sexless grillwork of a pilgrim's mask.

The Merchant traveled in style. His self-primed landcar was four times the length of a man, wide enough to house five people in comfort. There was no direct vision, only a series of screens revealing upon command what lay outside. The temperature never varied. Spigots supplied liqueurs and stronger things; food tablets were available; pressure couches insulated travelers against the irregularities of the road. There was slavelight for illumination, keyed to the Merchant's whims.

He was a man of pomp and bulk, deep olive of skin, with well-oiled black hair and somber, scrutinizing eyes. He dealt, we learned, in foodstuffs of other worlds, bartering our poor manufactures for the delicacies of the

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starborn ones. Now he was en route to Marsay to examine a cargo of hallucinatory insects newly come in from one of the Belt planets.

"You like the car?" he asked. Olmayne, no stranger to ease herself, was peering at the dense inner mantle of diamonded brocade in obvious amazement. "It was owned by the Comt of Perris," he went on. "Yes, I mean it, the Comt himself. They turned his palace into a museum, you know."

"I know," Olmayne said softly.

This was his chariot. It was supposed to be part of the museum, but I bought it off a crooked invader. You didn't know that they had crooked ones too, eh?" The Merchant's robust laughter caused the sensitive mantle on the walls of the car to recoil in disdain. "This one was the Procurator's boy friend. Yes, they've got *those*, too. He was looking for a certain fancy root that grows on a planet of the Fishes, something to give his virility a little boost, you know, and he learned that I controlled the whole supply here, and so we were able to work out a deal. Of course, I had to have the car adapted, a little. The Comt kept four neuters up front and powered the engine right off their metabolisms, you understand, running the thing on thermal differentials. Well, that's a fine way to power a car, if you are a Comt, but it uses up a lot of neuters through the year, and I felt I'd be overreaching my status if I tried anything like that. So I had the drive compartment stripped down and replaced with a standard roller-wagon engine, heavy-duty, a really subtle job, and there you are. You're lucky to be in here. It's only that you're Pilgrims. Ordinarily I don't let folks come inside, on account that they feel envy, and envious folks are dangerous to a man who's made something out of his life. Yet the Will brought you two to me. Heading for Jorslem, eh?"

"Yes," Olmayne said.

"Me too, but not yet! Not just yet, thank you!" He patted his middle. "I'd be there, you can bet on it, when I feel ready for renewal, but that's a good way off, the Will willing! You two been Pilgriming long?"

"No," Olmayne said.

"A lot of folks went Pilgrim after the conquest, I guess. Well, I won't blame 'em. We each adapt in our own ways to changing times. Say, you carrying those little stones the Pilgrims carry?"

"Yes," Olmayne said.

"Mind if I see one? Always been fascinated by the things. There was this trader from one of

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the Darkstar worlds, little skinny bastard with skin like oozing tar, he offered me ten quintals of the things. Said they were genuine, gave you the real communion, just like the Pilgrims had. I told him no, I wasn't going to fool with the Will. Some things you don't do, even for profit. But afterward I wished I'd kept one as a souvenir. I never even touched one." He stretched a hand toward Olmayne. "Can I see?"

"We may not let others handle the starstone," I said.

"I wouldn't tell anybody you let me!"

"It is forbidden."

"Look, it's private in here, the most private place on Earth, and — "

"Please. What you ask is impossible."

His face darkened, and I thought for a moment he would halt the car and order us out. My hand slipped into my pouch to finger the frigid starstone sphere that I had been given at the outset of my Pilgrimage. The touch of my fingertips brought faint resonances of the communion-trance to me, and I shivered in pleasure. He must not have it, I swore. But the Merchant, having tested us and found resistance, did not choose to press the matter.

We sped onward toward Marsay.

He was not a likeable man, but he had a certain gross charm. Olmayne, who after all was a fastidious woman and had lived most of her years in the glossy seclusion of the Hall of Rememberers, found him harder to take than I. But even Olmayne seemed to find him amusing when he boasted of his wealth and influence, when he told of the women who waited for him on many worlds, when he catalogued his homes and his trophies and the guildmasters who sought his counsel, when he bragged of his friendships with former Masters and Dominators. He talked almost wholly of himself and rarely of us, for which we were thankful.

Our Merchant's life seemed enviably undisrupted by the fall of our planet; he was as rich as ever, as comfortable, as free to move about. But even he felt occasionally irked by the presence of the invaders, as we found out by night not far from Marsay, when we were stopped at a checkpoint on the road.

Spy-eye scanners saw us coming, gave a signal to the spinnerets, and a golden spiderweb spurted into being from one shoulder of the highway to the other. The landcar's sensors detected it and instantly signalled us to a halt. The screens showed a dozen pale human figures.

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"Bandits?" Olmayne asked.

"Worse," said the Merchant. "Traitors." He scowled and turned to his communicator horn. "What is it?" he demanded.

"Get out for inspection."

"By whose writ?"

"The Procurator of Marsay," came the reply.

It was an ugly thing to behold: human beings acting as road-agents for the invaders. But it was inevitable that we should have begun to drift into their civil service, since work was scarce, especially for those who had been in the defensive guilds. The Merchant was stormy-faced with rage, but he was stymied, unable to pass the checkpoint's web. "I go armed," he whispered to us. "Wait inside and fear nothing."

He got out and engaged in a lengthy discussion, of which we could hear nothing, with the highway guards. At length some impasse must have forced recourse to higher authority, for three invaders abruptly appeared, waved their hired collaborators away and surrounded the Merchant. His demeanor changed; his face grew oily and sly, his hands moved rapidly in eloquent gestures, his eyes glistened. He led the three interrogators to the car, opened it and showed them his two passengers. The invaders appeared puzzled by the sight of Pilgrims amid such opulence, but they did not ask us to step out. After some further conversation, the Merchant rejoined us and sealed the car; the web was dissolved, and we sped toward Marsay.

As we gained velocity he muttered curses and said, "Do you know how I'd handle that long-armed filth? All we need is a coordinated plan. A night of knives. Every ten Earthmen make themselves responsible for taking out one invader. We'd get them all."

"Why has no one organized such a movement?" I asked.

"It's the job of the Defenders, and half of them are dead and the other half in the pay of *them*. It's not my place to set up a resistance movement. But that's how it should be done. Guerrilla action: sneak up behind 'em, give 'em the knife."

"More invaders would come," Olmayne said morosely.

"Treat 'em the same way!"

"They would retaliate with fire. They would destroy our world," she said.

"These invaders pretend to be civilized, more civilized than ourselves," the Merchant replied. "Such barbarity would give them a bad name on a million worlds. No, they wouldn't come with fire. They'd just get tired of hav-

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ing to conquer us over and over, of losing so many men. And they would go away, and we'd be free again."

"Without having won redemption for our ancient sins," I said.

"What's that, old man. What's that?"

"Mere bloody resistance would thwart the scheme the Will has devised for us. We must earn our freedom in a nobler way. We were not given this ordeal simply so that we might practice slitting throats." He snorted. "I should have remembered. I'm talking to Pilgrims. All right. Forget it all. I wasn't serious, anyway. Maybe you like the world the way it is, for all I know."

"I do not," I said.

He glanced at Olmayne. So did I; for I half expected her to tell the Merchant that I had already done my bit of collaborating with our conquerors. But Olmayne fortunately was silent on that topic, then.

We left our benefactor in Marsay, spent the night in a Pilgrim hostelry and set out on foot along the coast the next morning. So we traveled, Olmayne and I, through pleasant lands swarming with invaders. And so we came to Land Bridge and met delay and had our frosty moment of bickering and then were permitted to go on across that narrow tongue of sandy ground that links the lake-sundered continents. And so we crossed into Afreek, at last.

IV

Our first night on the other side, after our long and dusty crossing, we tumbled into a grimy inn near the lake's edge. Most of its clientele appeared to be Pilgrims, but there were some members of other guilds, chiefly Vendors and Transporters. At a room near the turning of the building there stayed a Rememberer whom Olmayne avoided even though she did not know him; she simply did not wish to be reminded of her former guild.

Among these who took lodging there was the Changeling Bernalt. Under the new laws of the invaders, Changelings might stay at any public inn, not merely those set aside for their special use; yet it seemed a little strange to see him here. We passed in the corridor. Bernalt gave me a tentative smile, as though about to speak again, but the smile died and the glow left his eyes. He appeared to realize I was not ready to accept his friendship. Or perhaps he merely recalled that Pilgrims, by the laws of their guild, were not supposed to have much to do with guildless ones. That law still stood.

We had a greasy meal of soups

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and stews. Afterward I saw her to her room and began to wish her good night when she said, "Wait. We'll do our communion together."

"I've been seen coming into your room," I pointed out. "There will be whispering if I stay long."

"We'll go to yours, then!"

Olmayne peered into the hall. All clear. She seized my wrist and we rushed toward my chamber, across the way. Closing and sealing the warped door, she said, "Your starstone, now!"

I took the stone from its hiding place in my robe, and she produced hers, and our hands closed upon them.

During this time of Pilgrimage I had found the starstone a great comfort. Many seasons now had passed since I had last entered a Watcher's trance, but I was not yet reconciled entirely to the breaking of my old habit; the starstone provided a kind of substitute for the swooping ecstasy I had known in Watching.

No Pilgrim is ever without his stone. They come from one of the outer worlds and may be had only by application to the guild.

We waited for the stones to overwhelm us. I gripped mine tightly. Dark, shining, more smooth than glass, it glowed in my grasp like a pellet of ice, and I felt myself becoming attuned to the power of the Will.

First came a heightened perception of my surroundings. Every crack in the walls of this ancient inn seemed now a valley. The soft wail of the wind outside rose to a keen pitch. In the dim glow of the room's lamp I saw colors beyond the spectrum.

When I let myself be drawn into the stone's effect, I was engulfed by something far larger than myself I was in direct contact with the matrix of the universe.

Call it communion with the Will.

From a great distance I heard Olmayne say, "Do you believe what some people say of these stones? That there is no communion, that it's all an electrical deception?"

"I have no theory about that," I said. "I am less interested in causes than in effects."

Skeptics say that the starstones are nothing more than amplifying loops which bounce a man's own brain-waves back into his mind; the awesome oceanic entity with which one comes in contact, these scoffers hold, is merely the thunderous recycling oscillation of a single shuttling electrical pulse beneath the roof of the Pilgrim's own skull. Perhaps.

Olmayne extended the hand that grippd her stone. She said, "When you were among the Rememberers, Tomis, did you study

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the history of early religion? All through time, man has sought union with the infinite. Many religions have held forth the hope of such a divine merging."

"And there were drugs, too," I murmured.

"Certain drugs, yes, cherished for their ability to bring the taker momentarily to a sensation of oneness with the universe. These starstones, Tomis, are only the latest in a long sequence of devices for overcoming the greatest of human curses, that is, the confinement of each individual soul within a single body. Our terrible isolation from one another and from the Will itself is more than most races of the unverse would be able to bear."

Her voice grew vague. She said much more, speaking to me out of the wisdom she had learned with the Rememberers, but her meaning eluded me; I was always quicker to enter communion than she, because of my training as a Watcher, and often her final words did not register.

That night as on other nights I seized my stone and felt the gong, the lapping of waves on an unknown beach, the whisper of the wind in an alien forest. And felt a summons. I yielded. And entered the state of communion. And gave myself up to the Will. I slipped down through the layers of my life, through my youth and middle years, my wanderings, my old loves, my torments, my joys, my troubled later years, my treasons, my insufficiencies, my griefs, my imperfections.

I freed myself of myself. And shed my selfness. And merged. And became one with thousands of Pilgrims, not merely Olmayne nearby, but others trekking the mountains of Hind and the sands of Arba, Pilgrims at their devotions in Ais and Palash and Stralya, Pilgrims moving toward Jorslem on the journey that some complete in months, some in years, and some never at all. I shared with all of them the instant of submergence into the Will. And saw in the darkness a deep purple glow on the horizon, which grew in intensity until it became an all-encompassing red brilliance. And went into it, though unworthy, unclean, flesh-trapped.

I was purified.

And awakened alone.

V

I knew Afreek well. When still a young man I had settled in the continent's dark heart. Out of restlessness I had left, finally, going as far north as Agupt. I did my Watching and went about from place to place, and chance brought me in contact with a lit-

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tle Flier girl just as I was ready to roam again, and so I left Agupt for Roum and then Perris.

Now I had come back with Olmayne. We kept close to the coast, avoiding the sandy inland wastes. As Pilgrims we were immune from most of the hazards of travel; we would never go hungry or without shelter, even in a place where no lodge for our guild existed, and all owed us respect. Olmayne's great beauty might have been a hazard to her, traveling as she was with no escort other than a shriveled old man, but behind the mask and robe of a Pilgrim she was safe. We unmasked only rarely, and never where we might be seen.

Within our lodgings she was careless of her virtue. We never shared a room — no Pilgrim hostelry would permit it — but we usually had adjoining ones, and she summoned me to hers or came to mine whenever the mood took her. Only once did it seem to occur to her that I might ever have been young enough to feel desire. She looked my scrawny, shrunken body over and said, "How will you look, I wonder, when you've been renewed in Jorslem? I'm trying to picture you young, Tomis. Will you give me pleasure then?"

"I gave pleasure in my time," I said obliquely.

Olmayne disliked the heat and dryness of Agupt. We traveled meanly by night and clung to our hostelries by day. The roads were crowded at all hours. The press of Pilgrims towards Jorslem was extraordinarily heavy. Olmayne and I speculated on how long it might take us to gain access to the waters of renewal at such a time.

"They say they don't admit all who come," she mused.

"Renewal is a privilege, not a right," I said. "Many are turned away."

"I understand also," said Olmayne, "that not all who enter the waters are successfully renewed."

"I know little of this."

"Some grow older instead of younger. Some grow young too fast and perish. There are risks."

"Would you not take those risks?"

She laughed. "Only a fool would hesitate." Her face clouded. "If the city is full of Pilgrims, maybe they won't let me into the house of renewal at all! They'll say I'm too young — tell me to come back in forty or fifty years. Tomis, would they do that to me?"

"It is hard for me to say."

The trembled. "They'll let *you* in. You're a walking corpse already — they have to renew you! But me — Tomis, I won't let them turn me away! If I have to

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pull Jorslem down stone by stone, I'll get in somehow!"

I wondered privately if her soul were in fit condition for one who poses as a candidate for renewal. Humility is recommended when one becomes a Pilgrim. But I had no wish to fell Olmayne's fury, and I kept my silence. Perhaps they would admit her to renewal despite her flaws. I had concerns of my own. It was vanity that drove Olmayne; my own goals were different. I had wandered long and done much, not all of it virtuous; I needed a cleansing of my conscience in the holy city more, perhaps, than I did a lessening of my years.

Or was it only vanity for me to think so?

VI

Several days eastward of that place, as Olmayne and I walked through a parched countryside, village children rushed upon us, chattering in fear and excitement.

"Please, come, come!" they cried. "Pilgrims, come!"

Olmayne looked bewildered and irritated. "What are they saying, Tomis? I can't get through their damnable Aguptan accents!"

"They want us to help," I said. I listened to their shouts. "In their village," I told Olmayne, "there is an outbreak of the crystallization disease. They wish to seek the mercies of the Will upon the sufferers."

Olmayne drew back. She flicked out her hands, trying to keep the children from touching her. To me she said, "We can't go there!"

"We must."

"We're in a hurry! Jorslem's crowded; I don't want to waste time in some dreary village."

"They need us, Olmayne."

"Are we Surgeons?"

"We are Pilgrims," I said quietly. "The benefits we gain from that carry certain obligations. If we are entitled to the hospitality of all we meet, we must also place our souls at the free disposal of the humble. Come."

"I won't go!"

"How will that sound in Jorslem, when you give an accounting of yourself, Olmayne?"

"It's a hideous disease. What if we get it?"

"Is that what troubles you? Trust in the Will! How can you expect renewal if your soul is so deficient in grace?"

"May you rot, Tomis," she said in a low voice. "When did you become so pious? You're doing this deliberately, because of what I said to you by Land Bridge. In a stupid moment I taunted you, and now you're will-

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ing to expose us both to a ghastly affliction for your revenge."

"The children are growing agitated, Olmayne. Will you wait here for me, or will you go on to the next village and wait in the hostelry there?"

"Don't leave me alone in the middle of nowhere!"

"I have to go to the sick ones," I said.

In the end she accompanied me — I think not out of any suddenly conceived desire to be of help, but rather out of fear that her selfish refusal might somehow be held against her in Jorslem. We came shortly to the village, which was small and decayed.

Shivering with heat we followed the children to the houses of sickness.

The crystallization disease is an unlovely gift from the stars. Not many afflictions of outworlders affect the Earthborn; but from the world of the Spear came this ailment, carried by alien tourists, and the disease has settled among us. If it had come during the days of the Second Cycle we might have eradicated it in a day; but our skills are dulled now. Olmayne was plainly terrified as we entered the first of the clay huts where the victims were kept.

There is no hope for one who has contracted this disease. One merely hopes that the healthy will be spared; and fortunately it is not a highly contagious disease. It works insidiously, transmitted in an unknown way. The first symptom is a scaliness of the skin: itch, flakes upon the clothing, inflammation. There follows a weakness in the bones as the calcium is dissolved. One grows limp and rubbery, but this is still an early phase. Soon the outer tissues harden. Thick opaque membranes form on the surface of the eyes; the nostrils may close and seal; the skin grows coarse and pebbled. In this phase prophecy is common. The sufferer partakes of the skills of a Somnambulist and utters oracles. The soul may wander, separating from the body for hours at a time, although the life-processes continue. Next, within twenty days after the onset of the disease, the crystallization occurs. While the skeletal structure dissolves, the skin splits and cracks, forming shining crytals in rigid geometrical patterns. The victim is quite beautiful at this time, taking on the appearance of a replica of himself in precious gems. The crystals glow with rich inner lights, violet and green and red; their sharp facets adopt new alignments from hour to hour; the slightest illumination in the room causes the sufferer to give off brilliant glittering reflections

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hat dazzle and delight the eye. All this time the internal body s changing, as if some strange hrysalis is forming. Miraculous- y the organs sustain life through- out every transformation, al- though in the crystalline phase he victim is no longer able to ommunicate with others and ossibly is unaware of the hanges in himself. Ultimately the netamorphosis reaches the vital rgans, and the process fails. The lien infestation is unable to eshape those organs without illing its host. The crisis is swift; brief convulsion, a final dis- harge of energy along the nerv- ous system of the crystallzed one, nd there is a quick arching of he body, accompanied by the elicate tinkling sounds of shiv- ring glass, and then all is over. On the planet to which this is ative, crystallization is not a dis- ease but an actual metamor- hosis, the result of thousands of ears of evolution toward a sym- iotic relationship.

Since the process is irreversible, Olmayne and I could do nothing f value here except offer conso- ation to these ignorant and rightened people. There were victims in all stages, from the first rash to the ultimate crys- allization. They were arranged n the hut accordng to their in- ensity of their infestation. To my eft was a somber row of victims, fully conscious and morbidly scratching their arms as they contemplated the horrors that awaited them. Along the rear wall were five pallets on which lay villagers in the coarse-skin- ned and prophetic phase. To my right were those in varying de- grees of crystallization, and up front, the diadem of the lot, was one who clearly was in his last hours of life. His body shimmered in almost painful beauty, encrust- ed with false emeralds and rubies and opals; he scarcely moved. Within that shell of wondrous color he was lost in some dream of ecstasy, finding at the end of his days more passion, more de- light, than he could ever have known in all his harsh peasant years.

"It's horrible," Olmayne whis- pered. "I won't go in!"

"We must. We are under obli- gation."

"I never wanted to be a Pil- grim!"

"You wanted atonement," I reminded her. "It must be earn- ed."

"We'll catch the disease!"

The Will can reach us any- where to infect us with this, Ol- mayne. It strikes at random. The danger is no greater for us in- side this building than it is in Perris."

We entered, Olmayne still re-

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luctant. Now fear assailed me, but I concealed it.

I forced myself to be tranquil. There are redemptions and redemptions, I told myself. If this disease is to be the source of mine, I will abide by the Will.

We passed from pallet to pallet, heads bowed, starstones in our hands. We said words. We smiled when the newly sick begged reassurance. We offered prayers. Olmayne paused before one girl in the secondary phase, whose eyes already were filming over with horny tissue, and knelt, and touched her starstone to the girl's scaly cheek. The girl spoke in oracles, but unhappily not in any language we understood.

At last we came to the terminal case, he who had grown his own superb sarcophagus. Somehow I felt purged of fear, and so too was Olmayne, for we stood a long while before the grotesque sight, silent, and then she whispered, "How terrible! How wonderful! How beautiful!"

Three more huts similar to this one awaited us.

The villagers clustered at the doorways. As we emerged from each building in turn, the healthy ones fell down about us, clutching at the hems of our robes, stridently demanding that we intercede for them with the Will. We spoke such words as seemed appropriate and not too insincere. Those within the huts received our words blankly, as if they already realized there was no chance for them; those outside, still untouched by the disease, clung to every syllable. The headman of the village — only an acting headman; the true chief lay crystallized — thanked us again and again, as though we had done something real. At least we gave comfort, which is not to be despised.

When we came forth from the last of the sickhouses we saw a slight figure watching us from a distance — the Changeling Bernalt. Olmayne nudged me.

"That creature has been following us, Tomis. All the way from Land Bridge!"

"He travels to Jorslem also."

"Yes, but why should he stop here? Why in this awful place?"

"Hush, Olmayne. Be civil to him now."

"To a *Changeling?*"

I glared at her. Bernalt approached. The mutated one was clad in a soft white robe that blunted the strangeness of his appearance. He nodded sadly toward the village and said, "A great tragedy. The Will lies heavy on this place."

He explained that he had arrived here several days ago and had met a friend from his native

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city of Nayrub. I assumed he meant a Changeling; but no Bernalt's friend was a Surgeon, he said, who had halted here to do what he could for the afflicted villagers. The idea of a friendship between a Changeling and a Surgeon seemed a bit odd to me, and positively contemptible to Olmayne, who did not trouble to hide her loathing of Bernalt.

A partly crystallized figure staggered from one of the huts, gnarled hands clutching. Bernalt went forward and gently guided it back within. Returning to us, he said, "There are times one is actually glad one is a Changeling. That disease does not affect us, you know." His eyes acquired a sudden glitter. "Am I forcing myself on you, Pilgrims? You seem like stone behind your masks. I mean no harm; shall I withdraw?"

"Of course not," I said, meaning the opposite. His company disturbed me; perhaps the ordinary disdain for Changelings was a contagion that had at last reached me. "Stay a while. I would ask you to travel with us to Jorslem, but you know it is forbidden for us."

"Certainly. I quite understand." He was coolly polite, but the seething bitterness in his was close to the surface. Most Changelings are such degraded bestial things that they are incapable of knowing how detested they are by normal guided men and women; but Bernalt clearly was gifted with the torment of comprehension. He smiled, and then he pointed. "My friend is here."

Three figures approached. One was Bernalt's Surgeon, a slender man, dark-skinned, soft-voiced, with weary eyes and sparse yellow hair. With him were an official of the invaders and another outworlder from a different planet. "I had heard that two Pilgrims were summoned to this place," said the invader. "I am grateful for the comfort you have brought these sufferers. I am Earthclaim Nineteen; this district is under my administration. Will you be my guests at dinner this night?"

I was doubtful of taking an invader's hospitality, and Olmayne's sudden clenching of her fist over her starstone told me that she also hesitated. Earthclaim Nineteen seemed eager for our acceptance. He was not as tall as most of his kind, and his malproportioned arms reached below his knees. Under the blazing Aguptan sun, his thick waxy skin acquired a high gloss, although he did not perspire.

Into a long, tense and awkward silence the Surgeon insertted: "No need to hold back. In this village we all are brothers. Join us tonight, will you?"

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We did. Earthclaim Nineteen occupied a villa by the shore of Lake Medit; in the clear light of late afternoon I thought I could detect Land Bridge jutting forward to my left, and even Eyrop at the far side of the lake. We were waited upon by members of the guild of Servitors who brought us cool drinks on the patio. The invader had a large staff, all Earthborn; to me it was another sign that our conquest had become institutionalized, and was wholly accepted by the bulk of the populace. Until long after dusk we talked, lingering over drinks even as the writhing auroras danced into view to herald the night. Bernalt the Changeling remained apart, though, perhaps ill at east in our presence. Olmayne too was moody and withdrawn; a mingled depression and exaltation had settled over her in the stricken village, and the presence of Bernalt at the dinner party had reinforced her silence, for she had no idea how to be polite in the presence of a Changeling. The invader, our host, was charming and attentive, trying to bring her forth from her bleakness. I had seen charming conquerors before. I had traveled with one who posed as the Earthborn Changeling Gormon, in the days just before the conquest. This one, Earthclaim Nineteen, had been a poet on his native world in those days. I said, "It seems unlikely that one of your inclinations would care to be part of a military occupation."

"All experiences strengthen the art," said Earthclaim Nineteen. "I seek to expand myself. In any case I am not a warrior but an administrator. Is it so strange that a poet can be an administrator, or an administrator a poet?" He laughed. "Among your many guilds, there is no guild of Poets. Why?"

"There are Communicants," I said. "They serve the muse."

But in a religious way. They are interpreters of the Will, not of their own souls. This stuff of your Communicants is too limited in scope; it deals only with acquiescence to the Will. There are other themes for poetry besides immersion of the Will, my friends. The love of person for person, the joy of defending one's home, the wonder of standing naked beneath the fiery stars —" The invader laughed. "Can it be that Earth fell so swiftly because its only poets were poets of acquiescence to destiny?"

"Earth fell," said the Surgeon, "because the Will required us to atone for the sin of our ancestors committed when they treated your ancestors like beasts. The quality of our poetry had nothing to do with it."

"The Will decreed that you

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would lose to us by way of punishment, eh? But if the Will is omnipotent, it must have decreed the sin of your ancestors that made the punishment necessary. Eh? You see the difficulty of believing in a divine force that determines all events? Where is the element of choice that makes suffering meaningful? To force you into a sin, and then to require you to endure defeat as atonement, seems to me an empty exercise. Forgive my blasphemy."

The Surgeon said, "You misunderstand. All that has happened on this planet is part of a process of moral instruction. The Will simply provides the raw material of events and allows us to follow such patterns as we desire."

"Example?"

"The Will imbued the Earthborn with skills and knowledge. During the First Cycle we rose from savagery in little time; in the Second Cycle we attained greatness. In our moment of greatness we grew swollen with pride, choosing to exceed our limitations. We imprisoned intelligent creatures of other worlds under the pretense of study, when we acted really out of an arrogant desire for amusement; and we toyed with our world's climate until oceans joined and continents sank and our old civilization was destroyed. Thus the Will instructed us in the boundaries of human ambition."

"I dislike that dark philosophy even more," said Earthclaim Nineteen. "I — "

"Let me finish," said the Surgeon. "The collapse of Second Cycle Earth was our punishment. The defeat of Third Cycle by you folk from the stars is a completion of that earlier punishment, but also the beginning of a new phase. You are the instruments of our redemption. By inflicting on us the final humiliation of conquest, you bring us to the bottom of our trough; now we renew our souls, now we begin to rise, tested by adversities."

I stared in sudden amazement at this Surgeon, who was uttering ideas that had been stirring in me all along the road to Jorslem, ideas of redemption both personal and planetary. I had paid little attention to the Surgeon before Now I wanted to draw him aside and hear more on these themes; but the conversation swept by too swiftly.

"Permit me a statement," Bernalt said suddenly, his first words in hours.

We looked at him. The pigmented bands in his face were ablaze, marking his emotion.

He said, nodding to the Surgeon, "My friend, you speak of redemption for the Earthborn.

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Do you mean *all* Earthborn, or only the guilded ones?"

"All Earthborn, of course," said the Surgeon mildly. "Are we not all equally conquered?"

"We are not equal in other things, though. Can there be redemption for a planet that keeps millions of its people thrust into guildlessness? I speak of my own folk, of course. We sinned long ago, thinking we were striking out against those who had created us as monsters. We strove to take Jorslem from you; and for this we were punished, and our punishment has lasted for a thousand years. We are still outcasts, are we not? Where has our hope of redemption been? Can you guilded ones consider yourself purified and made virtuous by your recent suffering, when you still step on us?"

The Surgeon looked dismayed. "You speak rashly, Bernalt. I know the Changelings have a grievance. But you know as well as I that your time of deliverance is at hand. In the days to come no Earthborn one will scorn you, and you will stand beside us when we regain our freedom."

Bernalt peered at the floor. "Forgive me, my friend. Of course, you speak the truth. I was carried away. The heat — this splendid wine — how foolishly I spoke!"

Earthclaim Nineteen said, "Are you telling me that a resistance movement is forming that will shortly drive us from your planet?"

"I only speak in abstract terms," said the Surgeon.

"I think your resistance movement will be purely abstract, too," the invader replied easily. "Forgive me, but I see little strength in a planet that could be conquered in a single night. We expect our occupation of Earth to be a long one and to meet little opposition. In the months that we have been here there has been no sign of increasing hostility to us. Quite the contrary: we are increasingly accepted among you."

"It is a part of a process," said the Surgeon. "As a poet, you should understand that words carry meanings of many kinds. We do not need to overthrow our alien masters in order to be free of them. Is that poetic enough for you?"

"Splendid," said Earthclaim Nineteen, getting to his feet. "Shall we go to dinner now?"

VII

When we left the villa in the morning, the Surgeon asked permission to join our Pilgrimage.

"There is nothing further I can do here," he explained. "At the outbreak of the disease I came up

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from my home in Nayrub, and I've been here many days, more to console than to cure, of course. Now I am called to Jorslem. However, if it violates your vows to have company on the road — "

"By all means come with us," I said.

"There will be one other companion," the Surgeon told us.

He meant the third person who had met us at the village: the outworlder, an enigma, still to say a first word in our presence. This being was a flattened spike-shaped creature somewhat taller than a man, mounted on a jointed tripod of angular legs; its place of origin was in the Golden Spiral; its skin was rough and bright red in hue, and the vertical rows of glassy oval eyes descended on three sides from the top of its tapered head. I had never seen such a creature before. It had come to Earth, according to the Surgeon, on a data-gathering mission, and had already roamed much of Ais and Stralya. Now it was touring the lands on the margin of Lake Medit; and after seeing Jorslem it would depart for the great cities of Eyrop. Solemn, unsettling in its perpetual watchfulnss, never blinking its many eyes nor offering a comment on what those eyes beheld, it seemed more like some odd take for a memory tank, than a machine, some information-in-living creature. But it was harmless enough, so we let it come with us to the holy city.

The Surgeon bade farewell to his Changeling friend, who went on alone ahead of us, and paid a final call on the crystallized village. We stayed back, since there was no point in our going. When he returned, his face was somber. Four new cases," he said. "This entire village will perish."

Olmayne examined herself from day to day for symptoms of the disease, but none appeared. She gave the Surgeon much trouble on that score, bothering him for opinions concerning real or fancied blemishes of her skin, embarrassing him by removing her mask in his presence so that he could determine that some speck on her cheek was not the first trace of crystallization.

The Surgeon took all this in good grace; while the outworld being was merely a cipher plodding alongside us, the Surgeon was a man of depth, patience and sophistication. He was native to Afreek and had been dedicated to his guild at birth by his father. Traveling widely, he had seen most of our world and had forgotten little of what he had seen. He spoke to us of Roum and Perris, of the frostflower fields of Strayla, of my own birthplace in the western island group of the Lost Continents. He questioned

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us tactfully about our starstones and the effects they produced — I could see he hungered to try the stone himself, but of course was forbidden to one who had not declared himself a Pilgrim — and when he learned that in former life I had been a Watcher, he asked me a great deal concerning the instruments by which I had scanned the heavens for invasions, wishing to know what it was I perceived and how I imagined the perception was accomplished. I spoke to him as fully as I could on these matters, though in truth I knew little.

Usually we kept to the green strip of fertile land bordering the lake, but once, at the Surgeon's insistence, we detoured into the choking desert to see something that he promised would be of interest. He would not tell us what it was. We were at this point traveling in hired rollerwagons, open on top, and sharp winds blew gust of sand in our faces. Sand adhered briefly to the outworlder's eyes, I saw; and I saw how efficiently it flushed each eye with a flood of blue tears every few moments. The rest of us huddled in our garments, heads down, whenever the wind arose.

"We are here," the Surgeon announced finally. "When I traveled with my father I first visited this place long ago. We will go inside — and then you, the former Rememberer, will tell us where we are."

It was a building two stories high made of bricks of white glass. The doors appeared sealed, but they gave at the slightest pressure. Lights glowed into life the moment we entered.

In long aisles, lightly strewn with sand, were tables on which instruments were mounted. Nothing was comprehensible to me. There were devices shaped like hands, into which one's own hands could be inserted; conduits led from the strange metal gloves to shining closed cabinets, and arrangements of mirrors transmitted images from the interiors of those cabinets to giant screens overhead. The Surgeon placed his hands in the gloves and moved his fingers; the screens brightened, and I saw images of tiny needles moving through shallow arcs. He went to other machines that released dribbles of unknown fluids; he touched small buttons that produced musical sounds; he moved freely through a laboratory of wonders, clearly ancient, which seemed still in order and awaiting the return of its users.

Olmayne was ecstatic. She followed the Surgeon from aisle to aisle, handling everything.

"Well, Rememberers?" he asked finally. "What is this?"

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"A Surgery," she said in lowered voice. A Surgery of the Years of Magic!"

"Exactly! Splendid!" He seemed in an oddly excited state. "We could make dazzling monsters here! We could work miracles! Fliers, Swimmers, Changelings, Twiners, Burners, Climbers! Invent your own guilds, shape men to your whims! This was the place!"

Olmayne said, "These Surgeries have been described to me. There are six of them left, one in northern Eyrop, one on Palash, one here, one far to the south in Deeper Afreek, one in western Ais — " She faltered.

"And one in Hind, the greatest of all," said the Surgeon.

"Yes, of course, Hind! The home of the Fliers!"

Their awe was contagious. I said, "This was where the shapes of men were changed? How was it done?"

The Surgeon shrugged. "The art is lost. The Years of Magic were long ago, old man."

"But surely if the equipment survives, we could guess how—"

"With these knives," said the Surgeon, "we cut into the fabric of the unborn, editing the human seed. The Surgeon placed his hands here and within that incubator the knives did their work. Out of this came Fliers and all the rest. The forms bred true. Some are extinct today, but our Fliers and our Changelings owe their heritage to some building as this. The Changelings, of course, were the Surgeon's mistakes. They should not have been permitted to live."

"I thought that these monsters were the products of teratogenetic drugs, given to them when they still were within the womb," I said. "You tell me now that Changelings were made by Surgeons. Which is so?"

"Both," he replied. "All Changelings today are descended from the flaws and errors committed by the Surgeons of the Years of Magic. Yet mothers in that unhappy group often enhance the monstrousness of their children with drugs, so that they will be more marketable. It is an ugly tribe not merely in looks. Small wonder that their guild was dissolved and they were thrust outside society. We — "

Something bright flew through the air, missing his face by less than a hand's breadth. He dropped to the floor, shouting to us to take cover. As I fell I saw a second missile fly toward us. Then it struck two thirds of the way up the outworlder's body and severed it instantly. Other missiles followed, clattering against the wall behind us. I saw our attackers: a band of Changelings,

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fierce and hideous. We were unarmed. They moved toward us. I readied myself to die.

From the doorway a voice cried out — a familiar voice, using the thick and unfamiliar words of the language Changelings speak among themselves. Instantly the assault ceased. Those who menaced us turned toward the door. The Changeling Bernalt entered.

"I saw your vehicle," he said. "I thought you might be here, and perhaps in trouble. It seems I came in time."

"Not altogether," said the Surgeon. He indicated the fallen outworlder, which was beyond all aid. "But why this attack?"

Bernalt gestured. "*They* will tell you."

We looked at the five Changelings who had ambushed us. They were not of the educated, civilized sort such as Bernalt, nor were any two of them of the same style each was a twisted, hunched mockery of the human form, one with ropy tendrils descending from his chin, one with a face that was a featureless void, another whose ears were giant cups, and so forth. From the one closest to us, a creature with small platforms jutting from his skin in a thousand places, we learned why we had been assaulted. In a brutal Aguptan dialect he told us that we had profaned a temple sacred to Changelings. "We keep out of Jorslem," he told us. "Why must you come here?"

Of course he was right. We asked his forgiveness, and the Surgeon explained that he had visited this place long ago and it had not been a temple then. That seemed to soothe the Changeling, who admitted that only in recent years had his kind used it as a shrine. He was soothed even more when Olmayne opened the overpocket fastened between her breasts and offered a few glittering gold coins. The bizarre and deformed beings were satisfied at that, and allowed us to leave the building. We would have taken the dead outworlder with us, but during our parley with the Changelings the body had nearly vanished, nothing but a faint gray streak remaining on the sandy floor to tell us where it had fallen. "A mortuary enzyme," the Surgeon explained. "Triggered by interruption of the life processes."

Others of this community of desert-dwelling Changelings were lurking about outside the building as we came forth. They were a tribe of nightmares, with skin of every texture and color, facial features arranged at random, all kinds of genetic improvisations of organs and bodily accessories. Bernalt himself, although their

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brother, seemed appalled by their monstrousness. They looked to him with awe. At the sight of us, some of them fondled the throwing weapons at their hips, but a sharp command from Bernalt prevented any trouble.

He said, "I regret the treatment you received and the death of the outworlder. But of course it is risky to enter a place that is sacred to backward and violent people."

"We had no idea," the Surgeon said. "We never would have gone in if we had realized — "

"Of course. Of course." Was there something patronizing about Bernalt's soft, civilized tones? "Well, again I bid you farewell."

I blurted suddenly, "No. Travel with us to Jorslem! It's ridiculous for us to go separately to the same place."

Olmayne gasped. Even the Surgeon seemed amazed. Only Bernalt remained calm. He said, "You forget, friend, that it is improper for Pilgrims to journey with the guildless. Besides, I am here to worship at this shrine, and it will take me a while. I would not wish to delay you." His hand reached out to mine. Then he moved away, entering the ancient Surgery. Scores of his fellow Changelings rushed in after him. I was grateful to Bernalt for his tact; my impulsive offer of companionship, though sincerely meant, had been impossible for him to accept.

We boarded our rollerwagons. In a moment we heard a dreadful sound: a discordant Changeling hymn in praise of I dare not think what deity, a scraping, grinding, screeching song as misshapen as those who uttered it.

"The beasts," Olmayne muttered. "A sacred shrine! A Changeling temple! How loathsome! They might have killed us all, Tomis. How can such monsters have a religion?"

I made no reply. The Surgeon looked at Olmayne sadly, and shook his head as though distressed by so little charity on the part of one who claimed to be a Pilgrim.

"They also are human," he said.

At the next town along our route we reported the starborn being's death to the occupying authorities. Then, saddened and silent, we three survivors continued onward, to the place where the coastline trends north rather than east. We were leaving sleepy Agupt behind and entering now into the borders of the land in which holy Jorslem lies.

VIII

The city of Jorslem sits some good distance inland from Lake Medit, on a cool plateau

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guarded by a ring of low barren rock-strewn mountains. A winding road took us down through the encircling hills to the city, whose wall was made of squared blocks of a fine stone, dark pink-gold in color. The houses and shrines, too, were of this stone. Groves of trees bordered the road, road, nor were they startrees, but native products of Earth, as was fitting to this, the oldest of man's cities. Older than Roum, older than Perris, its roots were deep in the First Cycle.

Within the walls everything had the aspect of great antiquity. Jorslem alone of the world's cities still preserves much of its First Cycle architecture: not merely broken columns and ruined aqueducts, as in Roum, but whole streets, covered arcades, towers, boulevards, that have lasted through every upheaval our world has seen. We wandered in wonder down streets paved with cobbled stones, into narrow alleys cluttered with children and beggars, across markets fragrant with spices. After an hour of this we felt it was time to seek lodgings, and here it was necessary for us to part company with the Surgeon, since he was ineligible to stay at a Pilgrim hostelry and it would have been costly and foolish for us to stay anywhere else. We saw him to the inn where he had previously booked a room. I thanked him for his good companionship on our journey, and he thanked us just as gravely and expressed the hope that he would see us again in Jorslem in the days to come. Then Olmayne and I took leave of him and rented quarters in one of the numerous places catering to the Pilgrim trade.

The city exists solely to serve Pilgrims and casual tourists, and so it is really one vast hostelry; robed Pilgrims are as common in Jorslem's streets as Fliers in Hind. We settled and rested a while; then we dined, and afterward walking along a broad street from which we could see, to the east, Jorslem's inner and most sacred district. There is a city within a city here. The most ancient part, so small it can be traversed in less than an hour on foot, is wrapped in a high wall of its own. Therein lie shrines revered by Earth's former religions: the Christers, the Hebers, the Mislams. The place where the god of the Christers died is said to be there, but this may be a distortion wrought by time, since what kind of god is it that dies? On a high place in one corner of the Old City stands a gilded dome sacred to the Mislams, which is carefully tended by the common folk of Jorslem though its significance is lost. And to the fore part of that high place

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are the huge gray blocks of a stone wall worshipped by the Hebers. These things remain, but the ideas behind them are lost; never while I was among the Rememberers did I meet any scholar who could explain the merit of worshipping a wall or a gilded dome. Yet the old records assure us that these three First Cycle creeds were of great depth and richness.

In the Old City, also, is a Second Cycle place that was of much more immediate interest to Olmayne and myself. As we stared through the darkness at the holy precincts, Olmayne said, "We should make application tomorrow at the house of renewal."

"I agree. I long now to give up some of my years."

She said something further, but I did not hear her words, for at that moment three Fliers passed above me, heading east. One was male, two female; they flew naked, according to the custom of their guild; and the Flier in the center of the group was a slim, fragile girl, mere bone and wings, moving with a grace that was exceptional even for her airy kind.

"*Avluela!*" I gasped.

The trio of Fliers disappeared beyond the parapets of the Old City. Stunned, shaken, I clung to a tree for support and struggled for breath.

"Tomis?" Olmayne said. "Tomis, are you ill?"

"I know it was Avluela. They said she had gone back to Hind, but no, that was Avluela! How could I mistake her?"

You've said that about every Flier you've seen since leaving Perris," said Olmayne coldly.

"But this time I'm certain! Where is a thinking cap? I must check with the Fliers' lodge at once!"

Olmayne's hand rested on my arm. "It's late, Tomis. You act feverish. Why this excitment over your skinny Flier, anyway? What did she mean to you?"

"She — "

I halted, unable to put my meaning into words. Olmayne knew the story of my journey up out of Agupt with the girl, how as a celibate old Watcher I had conceived a kind of paternal fondness for her, how I had perhaps felt something more powerful than that, how I had lost her to the false Changeling Gormon and how *he* had lost her in turn to the Prince of Roum. But yet what was Avluela to me, in truth?

"Come back to the inn and rest," Olmayne said. "Tomorrow we must seek renewal."

First, though, I donned a cap and made contact with the Fliers' Lodge. My thoughts slipped through to the storage brain of

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the guild registry; I asked and received the answer I had sought. Avluela of the Fliers was indeed now a resident of Jorslem. "Take this message for her," I said. "The Watcher she knew in Roum now is here as a Pilgrim and wishes to meet her outside the house of renewal at midday tomorrow."

With that done, I accompanied Olmayne to our lodgings. She seemed sullen and aloof, and when she unmasked in my room her face appeared rigid with jealousy. To Olmayne all men were vassals, even one so shriveled and worn as I; and she loathed it that another woman could kindle such a flame in me. When I drew forth my starstone, Olmayne at first would not join me in communion. Only when I began the rituals did she submit. But I was so tense that night that I was unable to make the merging with the Will, nor could she achieve it; and thus we faced one another glumly for half an hour, and abandoned the attempt and parted for the night.

IX

One must go by one's self to the house of renewal. At dawn I set out without Olmayne. In half an hour I stood before the golden wall of the Old City; in half an hour more I had finished my crossing of the inner city's tangled lanes. Passing before that gray wall so dear to the ancient Hebers, I went up onto the high place, going near the gilded dome of the vanished Mislams and, turning to the left, followed the stream of Pilgrims which already at this early hour was proceeding to the house of renewal.

This house is a Second Cycle building; for it was then that the renewal process was conceived, and of all that era's science only renewal has come down to us approximately as it must have been practiced in that time. Like those other few Second Cycle structures that survive, the house of renewal is supple and sleek, architecturally understated, with deft curves and smooth textures; it is without windows; it bears no external ornament whatever. There are many doors.

Just inside the entrance I was greeted by a green-robed member of the guild Renewers, who are recruited entirely from the rank of Pilgrims, those who are willing to make it their life's work to remain in Jorslem and aid others toward renewal.

The Renewer's voice was light and cheerful. "Welcome to this house, Pilgrim. Who are you, where are you from?"

"I am the Pilgrim Tomis, formerly Tomis of the Rememberers, and prior to that a Watcher,

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born to the name Wuellig. I am native to the Lost Continents and have traveled widely both before and after beginning my Pilgrimage."

"What do you seek here?"

"Renewal. Redemption."

"May the Will grant your wishes," said the Renewer. "Come with me."

I was led through a close, dimly lit passage into a small stone cell. The Renewer instructed me to remove my mask, enter into a state of communion, and wait. I freed myself from the bronze grillwork and clasped my star-stone tightly. The familiar sensations of communion stole over me.

Something probed my soul. Everything was drawn forth and laid out as if for inspection on the floor of my cell: my acts of selfishness and of cowardice, my flaws and failings, my doubts, my despairs, above all the most shameful of my acts, the selling of the Rememberer document to the invader overlord. In this house one might extend one's lifetime two or three times over; but why should the Renewers offer such benefits to anyone as lacking in merit as I?

I remained a long while in contemplation of my faults. Then the contact broke, and a different Renewer, a man of remarkable stature, entered the cell.

"The mercy of the Will is upon you, friend," he said, reaching forth fingers of extraordinary length to touch the tips of mine.

When I heard that deep voice and saw those white fingers I knew that I was in the presence of a man I had met briefly before, as I stood outside the gates of Roum in the season before the conquest of Earth. He had been a Pilgrim then, and he had invited me to join him on his journey to Jorslem, but I had declined, for Roum had beckoned to me.

"Was your Pilgrimage an easy one?" I asked.

"It was a valuable one," he replied. "And you? You are a Watcher no longer, I see."

"I am in my third guild this year."

"With one more yet to come."

"Am I to join you in the Renewers, then?"

"I did not mean that guild, friend Tomis. But we can talk more of that when your years are fewer. You have been approved for renewal, I rejoice to tell you."

"Despite my sins?"

"Because of your sins, such as they are. At dawn tomorrow you enter the first of your renewal tanks. I will be your guide through your second birth. I am the Renewer Talmit. Go, now, and ask for me when you return."

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"One question — "

"Yes?"

"I made my Pilgrimage together with a woman, Olmayne, formerly a Rememberer of Perris. Can you tell me if she has been approved for renewal as well?"

I know nothing of this Olmayne."

"She is not a good woman," I said. "She is vain, imperious, and cruel. But yet I think she is not beyond saving. Can you do anything to help her?"

"I have no influence in such things," Talmit said. "She must face interrogation like everyone else. I can tell you this, though: virtue is not the only criterion for renewal."

He showed me from the building. Cold sunlight illuminated the city. I was drained and depleted, too empty even to feel cheered that I had qualified for renewal. It was midday. I remembered my appointment with Avluela; I circled the house of renewal in rising anxiety. Would she come?

She waited by the front of the building, crimson jacket, furry leggings, glassy bubbles on her feet, telltale humps on her back; from afar I could make her out to be a Flier. "Avluela!" I called.

She whirled. She looked pale, thin, even younger than when I had last seen her. Her eyes searched my face, once again masked, and for a moment she was bewildered.

"Watcher? she said. "Watcher, is that you?"

"Call me Tomis now," I told her. "But I am the same man you knew in Agupt and Roum."

"Watcher! Oh, Watcher! *Tomis.*" She clung to me. "How long it's been! So much has happened!" She sparkled now, and the paleness fled her cheeks. "Come, let's find an inn, a place to sit and talk! How did you discover me here?"

"Through your guild. I saw you overhead last night."

"I came here in the winter. I was in Perris for a while, halfway back to Hind, and then I changed my mind. There could be no going home. Now I live near Jorslem, and I help with —" She cut her sentence sharply off. "Have you won renewal, Tomis?"

We descended from the high place into a humbler part of the inner city. "Yes," I said, "I am to be made younger. My guide is the Renewer Talmit — we met him as a Pilgrim outside Roum, do you remember?"

She had forgotten that. We seated ourselves at an open-air patio adjoining an inn, and Servitors brought us food and wine. Her gaiety was infectious; I felt renewed just to be with her. She spoke of those final cataclysmic

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days in Roum, when she had been taken into the place of the Prince as a concubine; and she told me of that terrible moment when Gorman the Changeling defeated the Prince of Roum on the evening of conquest, announcing himself as no Changeling but an invader in disguise, and taking from the Prince at once his throne, his concubine, and his vision.

"Did the Prince die?" she asked.

"Yes, but not of his blinding." I told her how that proud man had fled from Roum disguised as a Pilgrim, and how I had accompanied him to Perris, and how while we were among the Rememberers he had involved himself with Olmayne and had been slain by Olmayne's husband, whose life was thereupon taken by his wife. I also saw Gormon in Perris," I said. "He goes by the name of Victorious Thirteen now. He is high in the councils of the invaders."

Avleula smiled. "Gormon and I were together only a short while after the conquest. When does your renewal begin?"

"At dawn."

"Oh, Tomis, how will it be when you are a young man? Did you know that I loved you? All the time we traveled, all while I was sharing Gormon's bed and consorting with the Prince, you were the one I wanted! But of course you were a Watcher, and it was impossible. Besides, you were so old. Now you no longer Watch, and soon you will no longer be old, and — " Her hand rested in mine. "I should never have left your side. We both would have been spared much suffering."

"From suffering we learn," I said.

"Yes. Yes. I see that. How long will your renewal take?"

The usual time, whatever that may be."

"After that, what will you do? What guild will you choose? You can't be a Watcher, not now."

"No, nor a Rememberer either. My guide Talmit spoke of some other guild, which he would not name, and assumed that I would enroll in it when I was done with renewal. I suppose he thought I'd stay here and join the Renewers, but he said it was another guild than that."

"Not the Renewers," said Avluela. She leaned close. "The Redeemers," she whispered.

"Redeemers? That is a guild I do not know."

"It is newly founded."

No new guild has been established in more than a — "

"This is the guild Talmit meant. You would be a desirable member. The skills you developed when you were a Watcher make you exceptionally useful."

"Redeemers," I said, probing

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the mystery. "*Redeemers*. What does this guild do?"

Avluela smiled jauntily. "It rescues troubled souls and saves unhappy worlds. But this is no time to talk of it. Finish your business in Jorslem, and everything will become clear. We rose. Her lips brushed mine. "This is the last time I'll see you as an old man. It will be strange, Tomis, when you're renewed."

She left me then.

Toward evening I returned to my lodging. Olmayne was not in her room. A Servitor told me that she had been out all day. I waited until it was late; then I made my communion and slept, and at dawn I paused outside her door. It was sealed. I hurried to the house of renewal.

X

The Renewer Talmit met me within the entrance and conducted me down a corridor of green tile to the first renewal tank. "The Pilgrim Olmayne," he informed me, "has been accepted for renewal and will come here later this day." Talmit showed me into a small low room, close and humid, lit by dim blobs of slave-light and smelling faintly of crushed deathflower blossoms. My robe and my mask were taken from me, and the Renewer covered my head with a fine golden-green mesh of some flimsy metal, through which he sent a current, and when he removed the mesh my hair was gone, my head was as glossy as the tiled walls. It makes insertion of the electrodes simpler," Talmit explained. "You may enter the tank, now."

A gentle ramp led me down into the tank, which was a tub of no great size. I felt the warm soft slipperiness of mud beneath my feet, and Talmit nodded and told me it was irradiated regenerative mud, which would stimulate the increase of cell division that was to bring about my renewal, and I accepted it. I stretched out on the floor of the tank with only my head above the shimmering dark violet fluid that it contained. Talmit loomed above me, holding what seemed to be a mass of entangled copper wires, but as he pressed the wires to my bare scalp they opened as of their own accord and their tips sought my skull, burrowing down through skin and bone into the hidden wrinkled grayness. I felt nothing more than tiny prickling sensations.

"The electrodes," Talmit explained, "seek out the centers of ageing within your brain; we transmit signals that will induce a reversal of the normal processes of decay, and your brain will lose its perception of the di-

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rection of the flow of time. Your body thus will become more receptive to the stimulation it receives from the environment of the renewal tank. Close your eyes."

Over my face he placed a breathing mask. He gave me a gentle shove, and the back of my head slipped from the edge of the tank, so that I floated out into the middle. The warmth increased. I dimly heard bubbling sounds. I imagined black sulfurous bubbles coming up from the mud through the fluid in which I floated; I imagined that the fluid had turned the color of mud. Adrift in a tideless sea I lay, distantly aware that a current was passing over the electrodes, that something was tickling my brain, that I was engulfed in mud and in what could well have been an amniotic fluid. From far away came the deep voice of the Renewer Talmit, summoning me to youth, drawing me back across the decades, unreeling time for me. There was a taste of salt in my mouth.

Again I was crossing Earth Ocean, beset by pirates, defending my Watching equipment against their jeers and thrusts. Again I stood beneath the hot Aguptan sun meeting Avluela for the first time. I lived once more on Palash. I returned to the place of my birth in the western isles of the Lost Continents, in what formerly had been Usa-amrik. I watched Roum fall a second time. Fragments of memories swam through my softening brain. There was no sequence, no rational unrolling of events. I was a child. I was a weary ancient. I was among the Rememberers. I visited Somnambulists. I saw the Prince of Roum attempt to purchase eyes from an Artificer in Dijon. I bargained with the Procurator of Perris. I gripped the handles of my instruments and entered Watchfulness. I ate sweet things from a far-off world; I drew into my nostrils the perfume of springtime on Palash; I shivered in an old man's private winter; I swam in a surging sea, buoyant and happy; I sang; I wept; I resisted temptations; I yielded to temptations; I quarreled with Olmayne; I embraced Avluela; I experienced a flickering succession of nights and days as my biological clock moved in strange rhythms of reversal and acceleration. Illusions beset me. It rained fire from the sky; time rushed in several directions; I grew small and then enormous. I heard voices speaking in shades of scarlet and turquoise. Jagged music sparkled on the mountains. The sound of my drumming heartbeats was rough and fiery. I was trapped between strokes of my brain-piston, arms pressed to

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my sides so that I would occupy as little space as possible as it rammed itself home again and again and again. The stars throbbed, contracted, melted. Avluela said gently, "We earn a second youthtime through the indulgent benevolent impulses of the Will and not through the performance of individual good works." Olmayne said, "How sleek I get!" Talmit said, "These oscillations of perception signify only the dissolution of the wish toward self-destruction that lies at the heart of the ageing process." Gormon said, "These perceptions of oscillation signify only the self-destruction of the wish toward dissolution that lies at the ageing process of the heart." The Procurator Manrule Seven said, "We have been sent to this world as the devices of your purgation. We are instruments of the Will." Earthclaim Nineteen said, "On the other hand, permit me to disagree. The intersection of Earth's destinies and ours is purely accidental." My eyelids turned to stone. The small creatures comprising my lungs began to flower. My skin sloughed off, revealing strands of muscle clinging to bone. Olmayne said, "My pores grow smaller. My flesh grows tight. My breasts grow small." Avluela said, "Afterwards you will fly with us, Tomis." The Prince of Roum covered his eyes with his hands. The towers of Roum swayed in the winds of the sun. I snatched a shawl from a passing Rememberer. Clowns wept in the streets of Perris.

Talmit said, "Awaken, now, Tomis, come up from it, open your eyes."

"I am young again," I said.

"Your renewal has only begun," he said.

I could no longer move. Attendants seized me and swathed me in porous wrappings, and placed me on a rolling cart, and took me to a second bank, much larger, in which dozens of people floated, each in a dreamy seclusion from the others. Their naked skulls were festooned with electrodes their eyes were covered with pink tape; their hands were peacefully joined on their chests. Into this tank I went, and there were no illusions here, only a long slumber unbroken by dreams.

This time I awakened to the sounds of a rushing tide, and found myself passing feet-first through a constricted conduit, into a sealed tank where I breathed only fluid, and where I remained something more than a minute and something less than a century, while layers of sin were peeled from my soul. It was slow, taxing work. The Surgeons worked in a distance, their hands

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thrust into gloves that controlled the tiny flaying-knives, and they cleansed me of evil with flick after flick after flick of the little blades, cutting out guilt and sorrow, jealously and rage, greed, lust and impatience.

When they were done with me, they opened the lid of the tank and lifted me out. I was unable to stand unaided. They attached instruments to my limbs that kneaded and massaged my muscles, restoring the tone. I walked again. I looked down at my bare body, strong and taut-fleshed and vigorous. Talmit came to me and threw a handful of mirror-dust into the air so that I could see myself, and as the tiny particles cohered I peered at my gleaming reflection.

"No," I said. "You have the face wrong. I didn't look like that. My nose was sharper — the lips weren't so full — the hair not such a deep black — "

We have worked from the records of the guild Watchers, Tomis.. You are more exactly a replica of your early self than your own memory realizes."

"Can that be?"

"If you prefer, we can shape you to fit your self-conceptions and not reality. But it would be a frivolous thing to do, and it would take much time."

"No," I said. "It hardly matters."

He informed me then that I would have to remain in the house of renewal a while longer, until I was fully adapted to my new self. I was given the neutral clothes of a guildless one to wear, for I was without affiliation now; and I might now opt for any guild that would admit me once I left the house. How long will my renewal last?" I asked Talmit as I dressed. He replied, "You came here in summer. Now it is winter. We do not work swiftly."

"And how fares my companion Olmayne?"

"We failed with her."

"I don't understand."

"Would you like to see her?" Talmit asked.

"Yes," I said, thinking that he would bring me to Olmayne's room. In stead he conveyed me to Olmayne's tank. I stood on a ramp looking down into a sealed container; Talmit indicated a fiber telescope, and I peered into its staring eye and beheld Olmayne. Or rather, what I was asked to believe was Olmayne. A naked girl-child of about eleven, smooth-skinned and breastless, lay curled up in the tank, knees drawn close to the flat chest, thumb thrust in mouth. At first I did not understand. Then the child stirred, and I recognized the embryonic features of the regal Olmayne I had known: the wide mouth, the strong chin, the sharp

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strong cheekbones. A dull shock of horror rippled through me, and I said to Talmit, "What is this?"

"When the soul is too badly stained, Tomis, we must dig deep to cleanse it. Your Olmayne was a difficult case. We should not have attempted her; But she was insistent, and there were some indications that we might succeed with her. Those indications were in error, as you can see."

"But what happened to her?"

"The renewal entered the irreversible stage before we could achieve a purging of her poisons," Talmit said.

"You went too far? You made her too young?"

"As you can see. Yes."

"What will you do? Why don't you get out of there and let her grow up again?"

"You should listen more carefully, Tomis. I said the renewal is irreversible."

"*Irreversible?*"

"She is lost in childhood's dreams. Each day she grows years younger. The inner clock whirls uncontrollably. Her body shrinks; her brain grows smooth. She enters babyhood shortly. She will never awaken."

"And at the end — " I looked away. "What then? A sperm and an egg, separating in the tank?"

"The retrogression will not go that far. She will die in infancy. Many are lost this way."

"She spoke of the risks of renewal," I said.

"Yet she insisted on our taking her. Her soul was dark, Tomis. She lived only for herself. She came to Jorslem to be cleansed, and now she has been cleansed, and she is at peace with the Will. Did you love her?"

"Never. Not for an instant."

"Then what have you lost?"

"A segment of my past, perhaps." I put my eye to the telescope again and beheld Olmayne, innocent now, sexless, cleansed. At peace with the Will. I searched her oddly altered yet familiar face for insight into her dreams. Had she known what was befalling her, as she tumbled helplessly into youthfulness? Had she cried out in anguish and frustration when she felt her life slipping away? Had there been a final flare of the old imperious Olmayne, before she sank into this unwanted purity? The child in the tank was smiling. The supple little body uncoiled, then drew more tightly into a huddled ball. Olmayne was at peace with the Will. Suddenly, as though Talmit had spread another mirror in the air, I looked into my own new self and saw what had been done for me and knew that I had been granted another life

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with the proviso that I make something more of it than I had of my first one, and I felt humbled, and pledged myself to serve the Will, and I was engulfed in joy that came in mighty waves, like the surging tides of Earth Ocean, and I said farewell to Olmayne and asked Talmit to take me to another place.

XI

Avluela came to me in my room in the house of renewal, and we both were frightened when we met. The jacket she wore left her bunched-up wings bare; they seemed hardly under her control at all, but fluttered nervously, starting to open a short way, their gossamer tips expanding in little quivering flickers. Her eyes were large and solemn; her face looked more lean and pointed than ever. We stared in silence at one another a long while.

"Tomis?" she said finally, and I nodded.

She touched my shoulders, my arms, my lips. We were strangers. That withered old Watcher she had known and perhaps loved was gone, banished for the next fifty years or more, and in his place stood someone mysteriously transformed, unknown, unmet. The old Watcher had been a sort of father to her; what was this guildless young Tomis supposed to be? And what was she to me, a daughter no longer?

"Your eyes are the same," she said. "I would always know you by the eyes."

"What have you done these many months, Avluela?"

"I have been flying every night. I flew to Agupt and deep into Afreek. When it gets dark I go aloft. Do you know, Tomis, I feel truly alive only when I'm up there?"

"You are of the Fliers. It is in the nature of your guild to feel that way."

"One day we'll fly side by side, Tomis."

I laughed at that. "The old Surgeries are closed, Avluela. They work wonders here, but they can't transform me into a Flier. One must be born with wings."

"One doesn't need wings to fly," she said.

"I know. The invaders lift themselves without the help of wings. I saw you, one day soon after Roum had fallen, you and Gormon in the sky together — " I shook my head. "But I am no invader either."

"You will fly with me, Tomis. We'll go aloft, and not only by night, even though my wings are merely nightwings. In bright sunlight we'll soar together."

Her fantasy pleased me. I gathered her into my arms, and she was cool and fragile against

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me, and for a while we talked no more of flying. Later we walked through the corridors, passing others who were newly renewed, and we went into the great central room whose ceiling admitted the winter sunlight, and studied each other by that changing pale light, and walked and talked.

She came to me each day at my exercise time, and I went through the building with her, no longer leaning on her arm. In my room we embraced, and she was cool and slim against me, and in her ecstasy her wings unfolded until I was wrapped in their silken softness.

Talmit was with me frequently too. He showed me the arts of using my renewed body, and helped me successfully grow young. One day he told me that Olmayne's retrogression had come to its end. I felt no sorrow over that, just a curious emptiness.

"You will leave here soon," the Renewer said. "Are you ready?"

"I think so."

"Have you given much thought to your destination after this house?"

I must seek a new guild, I know."

"Many guilds would have you, Tomis. But which do you want?"

"The guild in which I would be most useful to mankind," I said. I owe the Will a life."

Talmit said, "Has the flier girl spoken to you of the possibilities before you?"

She mentioned a newly founded guild."

"Did she give it a name?"

"The guild of the Redeemers."

"What do you know of it?"

"Very little," I said.

"I am of the guild of the Redeemers," Talmit said. So is the Flier. Avluela."

"You both are already guilded! How can you belong to more than one guild?"

"Tomis, the guild of Redeemers accepts members from all other guilds. It is the supreme guild, as the guild of Dominators once was. In its ranks are Rememberers and Scribes, Indexers, Servitors, Fliers, Landholders, Somnambulists, Surgeons, Clowns, Merchants, and Vendors. There are Changelings too—"

"They are outside all guilds by law — "

"This is the guild of Redeemers. Even Changelings may win redemption, Tomis."

Chastened, I said, "Even Changelings, yes. But how strange it is to think of such a guild!"

"Would you despise a guild that embraces Changelings?"

"I find this guild difficult to comprehend."

"Understanding will come at the proper time."

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"When is the proper time?"

"The day you leave this place," said Talmit.

That day shortly arrived. Avluela came to fetch me. I stepped forth uncertainly into Jorslem's springtime to complete the ritual of renewal. She took me through the city to the holy places, so that I could worship at each of the shrines. I knelt at the wall of the Hebers and at the gilded dome of the Mislams; then I went down into the lower part of the city, through the marketplace, to the gray dark ill-fashioned building covering the place where the god of the Christers is said to have died; then I went to the spring of knowledge and the fountain of the Will, and from there to the guildhouse of the guild of Pilgrims to surrender my mask and robes and starstone, and thence to the wall of the Old City. At each of these places I offered myself to the Will with words I had waited long to speak. Pilgrims and ordinary citizens of Jorslem gathered at a respectful distance, knowing that I had been lately renewed and hoping that some emanation from my newly youthful body would bring them good fortune. At last my obligations were fulfilled. I was a free man in full health, able now to choose the quality of the life I wished to lead.

Avluela said, "Will you come with me to the Redeemers now? A meeting will convene in an hour's time."

From her tunic she drew something small and gleaming, which I recognized in bewilderment as a starstone. "What are you doing with that?" I asked. "Only Pilgrims — "

"Put your hand over mine," she said, extending a fist in which the starstone was clenched.

I obeyed. Her small pinched face grew rigid.

"Avluela, what — ?"

"A signal to the guild," she said gently. "A notice to them to gather now that you are on your way."

"How did you get that stone?"

"Come with me," she said. "Oh, Tomis, if only we could fly there! But it is not far. We meet almost in the shadow of the house of renewal. Come, Tomis. Come!

XII

There was no light in the room. Avluela led me into the subterranean blackness and told me that I had reached the guildhall of the Redeemers and left me standing by myself. "Don't move," she cautioned.

I sensed the presence of others in the room about me. But I heard nothing and saw nothing.

Something was thrust toward me.

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Avluela said, "Put out your hands. What do you feel?"

I touched a small square cabinet, resting perhaps on a metal framework. Along its face were familiar dials and levers. My groping hands found handles rising from the cabinet's upper surface. At once it was as though all my renewal had been undone and the conquest of Earth cancelled as well: I was a Watcher again, for surely this was a Watcher's equipment!

I said, "Is it not the same cabinet I once had. But it is not greatly different."

"Have you forgotten your skills, Tomis?"

"I think they remain with me even now."

"Use the machine, then," said Avluela. "Do your Watching once more, and tell me what you see."

Easily and happily I slipped into the old attitudes. I performed the preliminary rituals quickly, clearing my mind of doubts and frictions. It was surprisingly simple to bring myself into a spirit of Watchfulness though I had not attempted it since the night Earth fell.

Now I grasped the handles. They did not terminate in the grips to which I was accustomed: rather, something cool and hard was mounted at the tip of each handle. My hands closed over the twin coolnesses. I felt a moment of fear. Then I regained the necessary tranquility, and my soul flooded into the device before me, and I began to Watch.

In my Watchfulness I did not soar to the stars, as I had in the old days. My perception was limited to the immediate surroundings of my room. Eyes closed, body hunched in trance, I reached out and came first to Avluela, near me, almost upon me. I saw her plainly. She smiled; she nodded; her eyes were aglow.

— I love you.

— Yes, Tomis. And we will be together always.

— I have never felt so close to another person.

— In this guild we are all close, all the time. We are the Redeemers, Tomis. We are new. Nothing like this has been on Earth before.

— How am I speaking to you, Avluela?

— Your mind speaks to mine, through the machine. And some day the machine will not be needed.

The starstones grew warm in my hands. I clearly perceived the instrument, now: a Watcher's cabinet, but with certain modifications, among them the starstones mounted on the handles. And I looked beyond Avluela and saw other faces, ones that I

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knew. The austere figure of the Renewer Talmit was to my left. Beside him stood the Surgeon with whom I had journeyed to Jorslem, with the Changeling Bernalt at his elbow; and now I knew what business it was that brought these men of Nayrub to the holy city. The others I did not recognize; but I saw them all, by an inner light for the room was as dark as it had been when I entered it. Not only did I see them but I touched them, mind to mind.

The mind I touched first was Bernalt's. I met it easily though fearfully, drew back, met it again. I tried to enter Bernalt's mind. but I was afraid. How could I hide those prejudices, those petty contempts, those conditioned reflexes with which we unavoidably think of Changelings?

"Hide nothing," he counseled. "Those things are no secret to me. Give them up now and join me."

I struggled. I cast out demons. I summoned up the memory of the moment outside the Changeling shrine, after Bernalt had saved me, when I had invited him to journey with us. How had I felt then toward him?

I amplified that moment of gratitude and companionship. I let it swell and blaze, and it obliterated the encrustations of scorn and empty disdain, and I saw the human soul beneath the strange Changeling surface, and broke through that surface. He drew me toward his mind. I joined Bernalt, and he enrolled me in his guild. I was of the Redeemers now.

Through my mind rolled a voice, and I did not know whether I heard the resonant boom of Talmit, or the dry ironic tone of the Surgeon, or Bernalt's controlled murmur, or Avluela's soft whisper, for it was all these voices at once, and others, and they said:

"When all mankind is enrolled in our guild, we will be conquered no longer. When each of us is part of every other one of us, our sufferings will end. There is no need for us to struggle against our conquerors, for we will absorb them, once we are all Redeemed. Enter us, Tomis who was the Watcher Wuellig."

And I entered.

I became the Surgeon and the Flier and the Renewer and the Changeling and the Servitor and the rest. And they became me. And so long as my hands gripped the starstones we were one soul and one mind. It was the keen perception one gets from Watching coupled with the submergence in a larger entity that one gets from communion, and I knew this was something wholly

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new on Earth, not merely the founding of a new guild but the initiation of a new cycle of human existence, the birth of the Fourth Cycle upon this defeated planet.

The voice said, "Tomis, we will Redeem those in greatest need first. We will go into Agupt, into the desert where miserable Changelings huddle in an ancient building that they worship, and we will take them into us and make them clean again. And we will go on beyond Agupt, to all the lands of the world, and find those who are without guilds, and those who are without hope, and those who are without tomorrows, and we will give them life and purpose again. And a time will come when all Earth is Redeemed."

They put a vision before me of a transformed planet, and of the harsh-faced invaders yielding peacefully to us, begging to be incorporated into that new thing that had germinated in the midst of their conquest. They showed me an Earth that had been purged of its ancient sins.

Then I felt it was time to withdraw my hands from the machine I grasped, and I withdrew my hands.

The vision ebbed. The glow faded. But yet I was no longer alone in my skull, for some contact lingered, and the room had ceased to be dark.

"How did this happen?" I asked. "When did this begin?"

"In the days after the conquest," said Talmit, "we asked ourselves why we had fallen so easily, and how we could lift ourselves above what we had been. We saw that our guilds had not provided enough of a structure for our lives that some closer union was our way to redemption. We had the starstones; we had the instruments of Watching; all that remained was to fuse them."

The Surgeon said, "You will be important to us, Tomis, because you understand how to throw your mind forth. We seek former Watchers. They are the nucleus of our guild. Once your soul roved the stars to search out mankind's enemies; now it will roam the Earth to bring mankind together."

Avluela said, "You will help me to fly, Tomis, even by day. And you will fly beside me."

"When do you leave?" I asked.

"Now," she said. "I go to Agupt, to the temple of the Changelings, to offer them what we have. And all of us will join to give me strength, and that strength will be focused through you, Tomis." Her hands touched mine. Her lips brushed mine. "The life of Earth begins again, now this year, this new cycle. Oh, Tomis, we are all reborn!"

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XIII

I remained alone in the room. The others scattered. Avluela went above, into the street. I put my hands to the mounted starstones and I saw her as clearly as though she stood beside me. She was preparing herself for flight. First she put off her clothing, and her bare form glistened in the afternoon sun. Her body seemed impossibly delicate; a strong wind would scatter her, I thought. Then she knelt, bowed, made her ritual. She spoke to herself, yet I heard her words, the secret words Fliers say as they ready themselves to leave the ground.

She rose and let her wings unfold. Some passersby looked oddly at her, not because there was anything unusual about the sight of a naked Flier in the streets of Jorslem, but because the sunlight was so strong and her transparent wings, so lightly stained with pigment, were evidently nightwings incapable of withstanding the pressure of the solar wind.

"Now we fly to Agupt," she murmured, "to Redeem the Changelings and make them one of us. Tomis, will you come with me?"

"I will be with you," we said, and I gripped the starstones tightly and crouched over my cabinet of instruments in the dark room beneath the place where she stood. "We will fly together, Avluela."

"Up then," she said, and we said, "Up."

Her wings beat, curving to take the wind, and we felt her struggling in the first moment, and we gave her the strength she needed; she took it as it poured from us through me to her, and we rose high. The spires and parapets of Jorslem the golden grew small, and the city became a pink dot in the green hills. Avluela's throbbing wings thrust her swiftly westward, toward the setting sun, toward the land of Agupt. Her ecstasy swept through us all. "See, Tomis, how wonderful it is, far above everything? The cool wind against your bare flesh — the breeze in your hair — you drift on the currents, you coast, you soar — "

To Agupt. To the sunset.

We looked down at the sparkling Lake Medit. From this height one could not tell that our world had even been conquered. One saw only the beauty of the colors of the land and the sea, not the checkpoints of the invaders.

Those checkpoints would not long endure. We would conquer our conquerors, not with weapons but with love, and as the

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Redemption of Earth became universal we would welcome into our new self even the beings who had seized our planet.

In my dark room I sent new surges of power through her wings.

She hovered over the desert. The old Surgery, the Changeling shrine would soon be in sight. I grieved that we would have to come down. I wished we could stay aloft forever, Avluela and I.

"We will, Tomis, we will!" she told me. "Nothing can separate us now. You believe that, don't you, Tomis?"

"Yes," we said, "I believe that." And we guided her down through the darkening sky.

—ROBERT SILVERBERG

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NOW HEAR THE WORD OF THE LORD

by ALGIS BUDRYS

Listen, Men! We are deceiving you — but don't risk learning the truth!

The office building had been a hotel, once, and a famous married architect had shot a society physician in the grand foyer at that time. Now there was a horse-wire service doing business as a Bell substation down one of the twisting, door-lined corridors. The men who operated the cage elevators wore yellowed white shirts, no ties, and the pants from pin-striped suits. Everything was either wooden and painted olive green or clad in linoleum and worn down to grit. Lunchtimes, a sallow man sold bready hamburgers cooked in salad oil on an iron sheet in an alcove beside the main entrance. Every five minutes, all day, subway trains ran under the foundations.

Walter Keneally sat in an office with a numbered door and pine shelves on the walls of the one room. There were newspapers, books, magazines and many ledgers on the shelves. He spoke all day to Karachi, Alexandria, Reykjavik, Wellington, Seoul, Lhassa, Colombo and other cities, through the worn sand-colored telephone in his golden oak roll-top desk, or by other means. Every morning, too, there was a drift of mail on the floor below the slot in the door, and whenever he was not talking or listening to faraway voices, Walter Keneally, who looked like a smooth-skinned bear with a balded white crewcut, would be hunched over an Oliver side-arm typewriter with its black iron frame coated in gummy oil and grime. His short, calloused hands, hard as blackjacks, would stab their sau-

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sage fingers at the yellowed ivory key-tops, and further information and instructions would flow from him onto dimestore airmail stationery, into envelopes half-covered with stamps, thence into the mailbox on the corner that night, and thus to the four corners of the world.

He was there at eight-thirty each morning, and he left at seven each night. Once a week he went out to the post office at noon and bought two hundred dollars in stamps. Once a month he stopped at the Bargain Store for stationery. At night, he went to a room on Twelfth Street, where for thirty dollars a month he had an iron bed, a plywood closet one foot deep with two black hangers hooked over a length of piano wire, and a bureau with the bottom missing from its top drawer. At home and in his office, he would often pause in the middle of communicating and sigh.

He looked up from his typewriter now, at the shut door of his office, and pulled his eyelids until he was pinching the bridge of his nose. He sighed. At the same time, his door opened, a man stepped in carrying a furled umbrella in his left hand, and the man said sharply: "Keneally!"

Keneally had never seen him before, but the sudden voice turned him in his swiveling typist's chair. The stranger arced a long steel skewer like a rapier blade out of the umbrella, came in with quick steps and, with a practiced overhand motion and all his momentum, thrust the skewer through Keneally and anchored him to the golden oak desk.

There was a faint *chuff!* from Keneally. "Got you!" the thin, sharp-faced man said, his eyes glittering and his head cocked intently to one side as he watched Keneally's face.

Keneally looked down. The handle of the skewer was a length of adhesive tape wound around the home-ground steel; the white tape was grimy and frayed at the edges, as if it had been carried from place to place a long time and often toyed with. "Got me," he admitted in his slow, old bear's voice.

"I will not waste time. I will not give you an opportunity to receive any help from your international confederates," the thin man said, pursing his lips. "I am Amos Onsott of the One World Language League. My offices are also on this floor. My organization has hundreds of members throughout the world, and I am here to inform you we are destroying your conspiracy today."

Keneally tested the skewer's ability to keep him sprawled un-

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comfortably in the chair. There was a faint grating noise from his chest as he moved, and he settled back. "How long have you been on to us?"

"We have done considerable research. Beginning from the time I first noticed your activities and communicated my suspicions to certain League members who corroborated my deductions. Volunteers from our organization have investigated the activities of your underlings in many locations. We have verified that neither you nor your correspondents eat, sleep, or betray any other signs of human behavior."

"There is no time," Keneally said. "We have too much to do. Even at night, when we change shifts and make our reports." He wagged his head, looking from one side of the office to the other. "We do not require rest or pleasure."

Onsott now opened his suit coat and pulled a long, serrated-edge breadknife out of his trousers. "We will not get you all, but we will hand your organization a defeat that will give your survivors long second thoughts about meddling with the human race. We are not prepared to temporize, or compromise, or waste time attempting to convince official authority. Your bloodless parts will be our defense against charges of murder. A fair, untroubled world will be our evidence for your erstwhile plotting!" He came forward, lips pursed, eyes glittering.

"What have we done?" Keneally asked, sighing. "What about us has aroused your . . . humanity?"

"You are a robot under the control of intelligences in outer space, with whom you communicate telepathically You confirm our deductions? And you are the chief of an international organization of robots which has been consistently influencing human affairs. Disguised as humans, you have infiltrated every major scientific establishment our members have been able to inspect since my warning. You have influenced legislation and appropriations on a worldwide scale. You are in fact the managers of national policy in every noteworthy nation; *we* do not have your resources, my friend, but we are willing and, for amateurs, quite efficient — as you can see. What have you done?" Onsott was furious. "The world is inexorably approaching the ultimate war! How many years have you shaped our destiny! How many bombs and biological poisons have you brewed up! What have you *done!*"

He jumped to Keneally's side, seized his wrist, and pulled his arm out straight. The chair slew-

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ed wildly on its stiff casters and half-broken wheels, and the skewer bent in Keneally's chest but did not pull free. He raised his other arm and tried to reach across to help his imprisoned wrist, but could not make it. The thin, pale, indignant man had the leverage, and now, by trapping the arm against his side with one hand, was able to begin attacking Keneally's shoulder with the knife.

Keneally let his other arm fall and turned his head to watch the white, rumpled broadcloth being sawed into a frayed wound, and then the tee shirt's soft cotton trying to snag the knife's teeth. As the knife reached Keneally, it made a sound like something dividing a package of frozen spinach.

"World War III began August 12, 1958, and was over by mid-September," Keneally said. "Every major city and human installation on Earth was destroyed. A few weeks later, the last living thing on this planet succumbed to the incidental radioactivity. We are not controlled from outer space. We do not need to communicate with our makers at all. That's fortunate, because they can only perceive dimly from where they are. We are made by the future; by the human beings of the future who must somehow restore life to this world, and continuity to this world's history, or die because there is no human race in the future. Do you understand?"

Onsott's eyes stared into Keneally's, but the knife sawed back and forth remorselessly.

"The people of the future can manipulate time," Keneally said. "The transit of time is more difficult to understand than motorcar or interplanetary space. But if the human race lives long enough, then some day time has to be understood and devices built for acting through it. Not time ships, perhaps, but at least time grapples or time tools. Is that really so difficult to believe?"

Out beyond the grime-grayed window, a pigeon took flight from the spattered windowsill and, bluish-gray, flailed up into a sky of indeterminate color. Onsott's elbow jerked back and forth. His sleeve twitched the skirt of his jacket. His mouth was shut tight. His eyes hardly blinked.

Keneally said: "The humans who made me with their remote devices can't themselves enter their own past. They can't make changes in their own history. If they change the past they change themselves and can't be the people of the future world they believe in. We are not making war. People make war; we are trying

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to cancel it. It's not easy. The war was a complex event."

"I won't listen," Onsott said, the cords of his wrist white and taut as he bore down on the knife. "Your life isn't even self-consistent."

It was time for another subway train to go by underfoot. Keneally watched Onsott tremble slightly until it was time for the building's sway to have died out.

Keneally said: "They saw the war break out, and they knew what it meant. They are at their machines now, day and night peering to see if we are carrying out their plans. As long as we can act and they can see us, their time will not wink out; they will have succeeded, and their world will be green, and living. But if we should cease working, if even for an instant there were not some one of us working to restore this break in humanity's lifeline, then it would be true forever that Earth died in mid-September of 1958 and the human race died with it. Can I persuade you to stop? Can I persuade you to get in touch with your organization's members?"

But at this point, Onsott stepped back and released his hold. Keneally's left arm fell to the floor and shattered, still in its sleeve. Onsott hurled himself around to Keneally's other shoulder. Keneally turned his head.

"Onsott, there is *nothing* alive in this world except a few protein molecules being teased into organization and life in our laboratories; protein molecules that have been created to resist the great miasma of radiation that bathes this planet; bathes me, bathes *you*."

Onsott's forehead was glistening with perspiration. He snatched the knife away from Keneally's shoulder for an instant, bit hard at the knuckles, stared at the red-dimpled whiteness he had inflicted on the flesh he saw there, glared scornfully at Keneally, and resumed his work. "When I have you in a little heap of parts," he snarled, "will you still be talking?"

"Onsott, if there is going to be history, it must be human history. There must be lovers, and new model cars, and airline disasters; new syndicated comic strips, elections, and births of quintuplets. Don't you see that? These things must be part of the unbroken human heritage, even if there were no humans. There must be three billion human histories being played out on this world, and played without a hint of self-consciousness. Even if there are no protoplasmic humans to play them, and will not be until there has been much more success in the laboratories.

"Onsott, you want to live, don't

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you? You want to go on believing in this world? Feel pain, and joy, and hope for a day when everyone speaks your language? What moves you, Onsott? What do you prize above all other things? Do you want to keep it? Keep the chance of attaining it? You must stop this.

"Onsott, the radiation level will not permit life. The surface of this world is sterile; the deepest canyons and oceans are bare of life and are tumbled with heaps of calcium. There is no grass, there is no cool wind. There is sometimes rain and mud, and there is always death. Do you understand? The living world exists only in the minds of the subautomatons who now inhabit it for us in the firm conviction that what they see and do has some external reality, that the history they record and make leads naturally from the past and firmly into the future." Keneally looked around the office again. "They keep the dream, God bless them. God bless you. But others don't require pleasure and beauty. Others must be self-aware when the radiation-resistant humans finally emerge from our researches, and the reborn human race has been worked into the weave of history again." Keneally said, watching Onsott working palemouthed and intent: "We others mustn't dream; we must rebuild the grass and cities good as old again. We can't permit you to stop us." He looked closely at Onsott. "We would like to be considerate. But we can't ally ourselves with death."

Onsott stopped and listened to something, head to one side. A bus perhaps, turning the corner of Broadway on the street below; it was time for one. The familiar sound of shifting gears and laboring acceleration would be quite noticeable, even so far down this hallway. Onsott returned to his work.

Keneally shook his head and sighed. He went on talking, but there was now no particular attempt to make Onsott pay attention. "We have the factories and labs going again. We have the minimal communications. We have some of the key cities restored sufficiently to operate as centers of civilization. But we are far from done. If you leave me alone now, Onsott, you will enjoy the remainder of a long life, and the sense of age, and the answer to the question of what dying is like. Do you want that? Most humanistic individuals do. And I can promise it to you, because we are all still a long, sorry way away from the time when the human past is smoothly restored and *we* wink out like snuffed candles. You understand? The future can wait on

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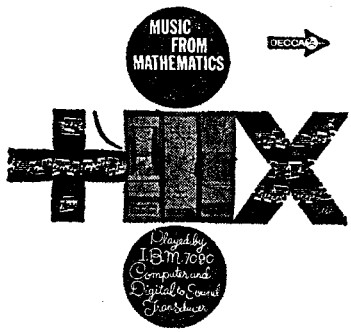

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this planet now only because this is not its true past. When we have made this a true world again, and saved the future, we must *all* go. We will not die. We will just . . . go. Without ever having had joy or reward. Onsott, I believe I know how a human mind sees the world and itself; please stop what you're doing."

Onsott had been trembling more and more violently. Now he suddenly stopped hacking at Keneally's shoulder and drove the knife crackling and spurting into Keneally's throat. "Por la spirito gehomaro!" he shouted.

Keneally's mouth said hollowly, "Onsott, Amos. Cancel, please. One World Language League. Cancel, please." Onsott became a bag of clothing around a falling pillar of dust, and left a great patch of gritty yellow on Keneally. "Keneally, Walter," Keneally"s mouth said. "Repair service."

The sound of typing began again behind the green-painted door with its flaking gilt number. Inside, a man with white hair, dirty trousers, and a shirt with the sleeves raggedly cut off sat hunched over a massive old typewriter. He looked like a bear impersonating a curator of animals. An umbrella stood in the corner.

—ALGIS BUDRYS

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The War With The Fnools

by PHILIP K. DICK

Illustrated by JONES

The Fnools were determined to invade Earth no matter how idiotic they looked doing it!

Captain Edgar Lightfoot of CIA said, "Darn it, the Fnools are back again, Major. They've taken over Provo, Utah."

With a groan, Major Hauk signaled his secretary to bring him the Fnool dossier from the locked archives. "What form are they assuming this time?" he asked briskly.

"Tiny real-estate salesmen," Lightfoot said.

Last time, Major Hauk reflected, it had been filling station attendants. That was the thing about the Fnools. When one took a particular shape they all took that shape. Of course, it made detection for CIA fieldmen much easier. But it did make the Fnools look absurd, and Hauk did not enjoy fighting an absurd enemy; it was a quality which tended to diffuse over both sides and even up to his own office.

"Do you think they'd come to terms?" Hauk said, half-rhetorically. "We could afford to sacrifice Provo, Utah, if they'd be willing to circumscribe themselves there. We could even add

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those portions of Salt Lake City which are paved with hideous old red brick."

Lightfoot said, "Fnools never compromise, Major. Their goal is Sol System domination. For all time."

Leaning over Major Hauk's shoulder, Miss Smith said "Here is the Fnool dossier, sir." With her free hand she pressed the top of her blouse against her in a gesture indicating either advanced tuberculosis or advanced modesty. There were certain indications that it was the latter.

"Miss Smith," Major Hauk complained, "here are the Fnools trying to take over the Sol System and I'm handed their dossier by a woman with a forty-two inch bosom. Isn't that a trifle schizophrenic — for me, at least?" He carefully averted his eyes from her, remembering his wife and the two children. "Wear something else from here on out," he told her. "Or swaddle yourself. I mean, my God, let's be reasonable; let's be realistic."

"Yes, Major," Miss Smith said. "But remember, I was selected at random from the CIA employees pool. I didn't *ask* to be your secretary."

With Captain Lightfoot beside him, Major Hauk laid out the documents that made up the Fnool dossier.

In the Smithsonian there was a huge Fnool, standing three feet high, stuffed and preserved in a natural habitat-type cubicle. School children for years had marveled at this Fnool, which was shown with pistol aimed at Terran innocents. By pressing a button, the school children caused the Terrans (not stuffed but imitation) to flee, whereupon the Fnool extinguished them with its advanced solar-powered weapon . . . and the exhibit reverted to its original stately scene, ready to begin all over again.

Major Hauk had seen the exhibit, and it made him uneasy. The Fnools, he had declared time and time again, were no joke. But there was something about a Fnool that — well, a Fnool was an idiotic life form. That was the basis of it. No matter what it imitated it retained its midget aspect; a Fnool looked like something given away free at supermarket openings, along with balloons and moist purple orchids. No doubt, Major Hauk had ruminated, it was a survival factor. It disarmed the Fnool's opponents. Even the name. It was just not possible to take them seriously, even at this very moment when they were infesting Provo, Utah, in the form of miniature real-estate salesmen.

Hauk instructed, "Capture a Fnool in this current guise, Lightfoot, bring it to me and I'll par-

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ley. I feel like capitulating, this time. I've been fighting them for twenty years now. I'm worn out."

"If you get one face to face with you," Lightfoot cautioned, "it may successfully imitate you and that would be the end. We would have to incinerate both of you, just to be on the safe side."

Gloomily, Hauk said, "I'll set up a key password situation with you right now, Captain. The word is *masticate*. I'll use it in a sentence . . . for instance, 'I've got to thoroughly masticate these data.' The Fnool won't know that — correct?"

"Yes, Major," Captain Lightfoot sighed and left the CIA office at once, hurrying to the 'copter field across the street to begin his trip to Provo, Utah.

But he had a feeling of foreboding.

When his 'copter landed at the end of Provo Canyon on the outskirts of the town, he was at once approached by a two-foot-high man in a gray business suit carrying a briefcase.

"Good morning, sir," the Fnool piped. "Care to look at some choice lots, all with unobstructed views? Can be subdivided into—"

"Get in the 'copter," Lightfoot said, aiming his Army-issue .45 at the Fnool.

"Listen, my friend," the Fnool said, in a jolly tone of voice. "I can see you've never really given any hard-headed thought to the meaning of our race having landed on your planet. Why don't we step into the office a moment and sit down?" The Fnool indicated a nearby small building in which Lightfoot saw a desk and chairs. Over the office there was a sign:

EARLY BIRD
LAND DEVELOPMENT
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"'The early bird catches the worm,'" the Fnool declared. "And the spoils go to the winner, Captain Lightfoot. By nature's laws, if we manage to infest your planet and pre-empt you, we've got all the forces of evolution and biology on our side." The Fnool beamed cheerily.

Lightfoot said, "There's a CIA major back in Washington, D.C. who's on to you."

"Major Hauk has defeated us twice," the Fnool admitted. "We respect him. But he's a voice crying in the wilderness, in this country, at least. You know perfectly well, Captain, that the average American viewing that exhibit at the Smithsonian merely smiles in a tolerant fashion. There's just no awareness of the *menace*."

By now two other Fnools, also in the form of tiny real-estate salesmen in gray business suits

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carrying briefcases, had approached. "Look," one said to the other. "Charley's captured a terran."

"No," its companion disagreed, "the Terran captured him."

All three of you get in the CIA 'copter," Lightfoot ordered, waving his .45 at them.

"You're making a mistake," the first Fnool said, shaking its head. "But you're a young man; you'll mature in time." It walked to the 'copter. Then, all at once, it spun and cried, "*Death to the Terrans!*"

Its briefcase whipped up, a bolt of pure solar energy whined past Lightfoot's right ear. Lightfoot dropped to one knee and squeezed the trigger of the .45; the Fnool, in the doorway of the 'copter, pitched head-forward and lay with its briefcase beside it. The other two Fnools watched as Lightfoot cautiously kicked the briefcase away.

"Young," one of the remaining Fnools said, "but with quick reflexes. Did you see the way he dropped on one knee?"

Terrans are no joke," the other agreed. "We've got an uphill battle ahead of us."

"As long as you're here," the first of the remaining Fnools said to Lightfoot, "why don't you put a small deposit down on some valuable unimproved land we've got a listing for? I'll be glad to run you out to have a look at it. Water and electricity available at a slight additional cost."

"Get in the 'copter," Lightfoot repeated, aiming his gun steadily at them.

In Berlin, an *Oberstleutnant* of the SHD, the *Sicherheitsdienst* — the West German Security Service — approaching his commanding officer, saluted in what is termed Roman style and said, "*General, die Fnoolen sind wieder zuruck. Was sollen wir jetz tun?*"

"The Fnools are *back?*" Hochflieger said, horrified. "Already? But it was only three years ago that we uncovered their network and eradicated them." Jumping to his feet General Hochflieger paced about his cramped temporary office in the basement of the *Bundesrat Gebaude,* his large hands clasped behind his back. "And what guise this time? Assistant Ministers of Domestic Finance, as before?"

"No sir," the *Oberstleutnant* said. "They have come as gear inspectors of the VW works. Brown suit, clipboard, thick glasses, middle-aged. Fussy. And, as before, *nur* six-tenth of a meter high."

"What I detest about the Fnools," Hochflieger said, "is their ruthless use of science in the service of destruction, especially

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their medical techniques. They almost defeated us with that virus infection suspended in the gum on the backs of multi-color commerative stamps."

"A desperate weapon," his subordinate agreed, "but rather too fantastic to be successful, ultimately. This time they'll probably rely on crushing force combined with an absolutely synchronized timetable."

"*Selbsverstandlich,*" Hochflieger agreed. "But we've nonetheless got to react and defeat them. Inform Terpol." That was the Terra-wide organization of counter-intelligence with headquarters on Luna. Where, specifically, have they been detected?"

"In Schweinfurt only, so far."

"Perhaps we should obliterate the Schweinfurt area."

"They'll only turn up elsewhere."

"True." Hochflieger brooded. "What we must do is pursue Operation *Hundefutter* to successful culmination." *Hundefutter* had developed for the West German Government a sub-species of Terrans six-tenths of a meter high and capable of assuming a variety of forms. They would be used to penetrate the network of Fnool activity and destroy it from within. *Hundefutter,* financed by the Krupp family, had been held in readiness for just this moment.

"I'll activate *Kommando Ein-*

BRUCE ELIOT JONES

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satzgruppe II," his subordinate said. "As counter-Fnools they can begin to drop behind Fnool lines near the Schweinfurt area immediately. By nightfall the situation should be in our hands."

"*Gruss Gott,*" Hochfleiger prayed, nodding. "Well, get the *kommando* started, and we'll keep our ears open to see how it proceeds."

If it failed, he realized, more desperate measures would have to be initiated.

The survival of our race is at stake, Hochflieger said to himself. The next four thousand years of history will be determined by the brave act of a member of the SHD at this hour. Perhaps myself.

He paced about, meditatiing on that.

In Warsaw the local chief of the People's Protective Agency for Preserving the Democratic Process — the NNBNDL — read the coded teletype dispatch several times as he sat at his desk drinking tea and eating a late breakfast of sweet rolls and Polish ham. This time disguised as chess players, Serge Nicov said to himself. And each Fnool making use of the queen's pawn opening, Qp to Q3 . . . a weak opening, he reflected, especially against Kp to K4, even if they draw white. But —

Still a potentially dangerous situation.

On a piece of official stationery he wrote *select out class of chess players employing queen's pawn opening.* For Invigorating Forest-r e n e w a l Team, he decided. Fnools are small, but they can plant saplings . . . we must get some use out of them. Seeds; they can plant sunflower seeds for our tundra-removal vegetable-oil venture.

A year of hard physical work, he decided, and they'll think twice before they invade Terra again.

On the other hand, we could make a deal with them, offer them an alternative to invigorating forest-renewal activity. They could enter the Army as a special brigade and be used in Chile, in the rugged mountains. Being only sixty-one centimeters high, many of them could be packed into a single nuclear sub for transport . . . but can Fnools be trusted?

The thing he hated most about Fnools — and he had learned to know them in their previous in--vasions of Terra — was their deceitfulness. Last time they had taken the physical form of a troupe of ethnic dancers . . . and what dancers they had turned out to be. They had massacred an audience in Leningrad before anyone could intervene, men, women and children all dead on

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the spot by weapons of ingenious design and sturdy although monotonous construction which had masqueraded as folk-instruments of a five-stringed variety.

It could never happen again; all Democratic lands were alert, now; special youth groups had been set up to keep vigil. But something new — such as this chess-player deception — could succeed as well, especially in small towns in the East republics, where chess players were enthusiastically welcomed.

From a hidden compartment in his desk Serge Nicov brought out the special non-dial phone, picked up the receiver and said into the mouthpiece, "Fnools back, in North Caucasus area. Better get as many tanks as possible lined up to accept their advance as they attempt to spread out. Contain them and then cut directly through their center, bisecting them repeatedly until they're splintered and can be dealt with in small bands."

"Yes, Political Officer Nicov."

Serrge Nicov hung up and resumed eating his — now cold — late breakfast.

As Captain Lightfoot piloted the 'copter back to Washington, D.C. one of the two captured Fnools said,

"How is it that no matter what guise we come in, you Terrans can always detect us? We've appeared on your planet as filling station attendants, Volkswagen gear inspectors, chess champions, folk singers complete with native instruments, minor government officials, and now real-estate salesmen — "

Lightfoot said, "It's your size."

"That concept conveys nothing to us."

"You're only two feet tall!"

The two Fnools conferred, and then the other Fnool patiently explained, "But size is relative. We have all the absolute qualities of Terrans embodied in our temporary forms, and according to obvious logic — "

"Look," Lightfoot said, "stand here next to me." The Fnool, in its gray business suit, carrying its briefcase, came cautiously up to stand beside him. "You just come up to my knee cap," Lightfoot pointed out. I'm six feet high. You're only one- third as tall as I. In a group of Terrans you Fnools stand out like an egg in a barrel of kosher pickles."

"Is that a folk saying?" the Fnool asked. I'd better write that down." From its coat pocket it produced a tiny ball point pen no longer than a match. "Egg in barrel of pickles. Quaint. I hope, when we've wiped out your civilization, that some of your ethnic customs will be preserved by our museums."

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"I hope so, too," Lightfoot said, lighting a cigarette.

The other Fnool, pondering, said, "I wonder if there's any way we can grow taller. Is it a racial secret preserved by your people?" Noticing the burning cigarette dangling between Lightfoot's lips, the Fnool said, "Is that how you achieve unnatural height? By burning that stick of compressed dried vegetable fibers and inhaling the smoke?"

"Yes," Lightfoot said, handing the cigarette to the two-foot-high Fnool. "That's our secret. Cigarette-smoking makes you grow. We have all our offspring, especially teen-agers, smoke. Everyone that's young."

"I'm going to try it," the Fnool said to its companion. Placing the cigarette between its lips, it inhaled deeply.

Lightfoot blinked. Because the Fnool was now four feet high, and its companion instantly imitated it; both Fnools were twice as high as before. Smoking the cigarette had augmented the Fnools' height incredibly by two whole feet.

"Thank you," the now four foot-high real-estate salesman said to Lightfoot, in a much deeper voice than before. "We are certainly making bold strides, are we not?"

Nervously, Lightfoot said, "Gimme back the cigarette."

In his office at the CIA building, Major Julius Hauk pressed a button on his desk, and Miss Smith alertly opened the door and entered the room, dictation pad in hand.

"Miss Smith," Major Hauk said, "Captain Lightfoot's away. Now I can tell you. The Fnools are going to win this time. As senior officer in charge of defeating them, I'm about to give up and go down to the bomb-proof shelter constructed for hopeless situations such as this."

"I'm sorry to hear that, sir," Miss Smith said, her long eyelashes fluttering. "I've enjoyed working for you."

"But you, too," Hauk explained. "*All* Terrans are wiped out; our defeat is planet-wide." Opening a drawer of his desk he brought out an unopened fifth of Bullock & Lade Scotch which he had been given as a birthday present. "I'm going to finish this B&L Scotch off first," he informed Miss Smith. "Will you join me?"

"No thank you, sir," Miss Smith said. "I'm afraid I don't drink, at least during the daylight hours.

Major Hauk drank for a moment from a dixie cup, then tried a little more from the bottle just to be sure it was Scotch all the way to the bottom. At last he put it down and said, "It's hard

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to believe that our backs could be put to the wall by creatures no larger than domestic orange-striped tomcats, but such is the case." He nodded courteously to Miss Smith. "I'm off for the concrete sub-surface bomb-proof shelter, where I hope to hold out after the general collapse of life as we know it."

"Good for you, Major Hauk," Miss Smith said, a little uneasliy. "But are you — just going to *leave* me here to become a captive of the Fnools? I mean — " Her sharply pointed breasts quivered in becoming unison beneath her blouse. "It seems sort of mean."

"You have nothing to fear from the Fnools, Miss Smith," Major Hauk said. "After all, two feet tall — " He gestured. "Even a neurotic young woman could scarcely — " He laughed. "Really."

"But it's a terrible feeling," Miss Smith said, "to be abandoned in the face of what we know to be an unnatural enemy from another planet entirely."

"I tell you what," Major Hauk said thoughtfully. "Perhaps I'll break a series of strict CIA rulings and allow you to go below to the shelter with me."

Putting down her pad and pencil and hurrying over to him, Miss Smith breathed, "Oh, Major, how can I thank you!"

"Just come along," Major Hauk said, leaving the bottle of B&L Scotch behind in his haste, the situation being what it was.

Miss Smith clung to him as he made his way a trifle unsteadily down the corridor to the elevator.

"Drat that Scotch," he murmured. "Miss Smith, Vivian, you were wise not to touch it. Given the cortico-thalamic reaction we are all experiencing in the face of the Fnoolian peril, Scotch isn't the beneficial balm it generally is."

"Here," his secretary said, sliding under his arm to help prop him up as they waited for the elevator. "Try to stand firm, Major. It won't be long now."

"You have a point there," Major Hauk agreed. "Vivian, my dear."

The elevator came at last. It was the self-service type.

"You're being really very kind to me," Miss Smith said, as the major pressed the proper button and the elevator began to descend.

"Well, it may prolong your life," Major Hauk agreed. "Of course, that far underground . . . the average temperature is much greater than at the Earth's surface. Like a deep mine shaft, it runs in the near-hundreds."

"But at least we'll be alive," Miss Smith pointed out.

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Major Hauk removed his coat and tie. "Be prepared for the humid warmth," he told her. "Here, perhaps you would like to remove your coat."

"Yes," Miss Smith said, allowing him in his gentlemanly way to remove her coat.

The elevator arrived at the shelter. No one was there ahead of them, fortunately; they had the shelter all to themselves.

"It *is* stuffy down here," Miss Smith said as Major Hauk switched on one dim yellow light. "Oh dear." She stumbled over something in the gloom. "It's so hard to see." Again she stumbled over some object; this time she half-fell. "Shouldn't we have more light, Major?"

"What, and attract the Fnools?" In the dark, Major Hauk felt about until he located her; Miss Smith had toppled onto one of the shelter's many bunks and was groping about for her shoe.

"I think I broke the heel off," Miss Smith said.

"Well, at least you got away with your life," Major Hauk said. "If nothing else." In the gloom he began to assist her in removing her other shoe, it being worthless, now.

"How long will we be down here?" Miss Smith asked.

"As long as the Fnools are in control," Major Hauk informed her. "You'd better change into radiation-proof garb in case the rotten little non-terrestrials try H-bombing the White House. Here, I'll take your blouse and skirt — there should be overalls somewhere around."

"You're being really kind to me," Miss Smith breathed, as she handed him her blouse and skirt. "I can't get over it."

"I think," Major Hauk said, "I'll change my mind and go back up for that Scotch; we'll be down here longer than I anticipated and we'll need something like that as the solitude frays our nerves. You stay here." He felt his way back to the elevator.

"Don't be gone long," Miss Smith called anxiously after him. "I feel terribly exposed and unprotected down here alone, and what is more I can't seem to find that radiation-proof garb you spoke of."

"Be right back," Major Hauk promised.

At the field opposite the CIA Building, Captain Lightfoot landed the 'copter with the two captive Fnools aboard. "Get moving," he instructed them, digging the muzzle of his Service .45 into their small ribs.

"It's because he's bigger than us, Len," one of the Fnools said to the other. "If we were the same size he wouldn't dare treat us this way. But now we under-

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stand — finally — the nature of the Terrans' superiority."

Yes," the other Fnool said. "The mystery of twenty years has been cleared up."

"Four feet tall is still suspicious-looking," Captain Lightfoot said, but he was thinking, If they grow from two feet to four feet in one instant, just by smoking a cigarette, what's to stop them from growing two feet more? Then they'll be six feet and look exactly like us.

And it's all my fault, he said to himself miserably.

Major Hauk will destroy me, career-wise if not body-wise.

However, he continued on as best he could; the famous tradition of the CIA demanded it. "I'm taking you directly to Major Hauk," he told the two Fnools. "He'll know what to do with you."

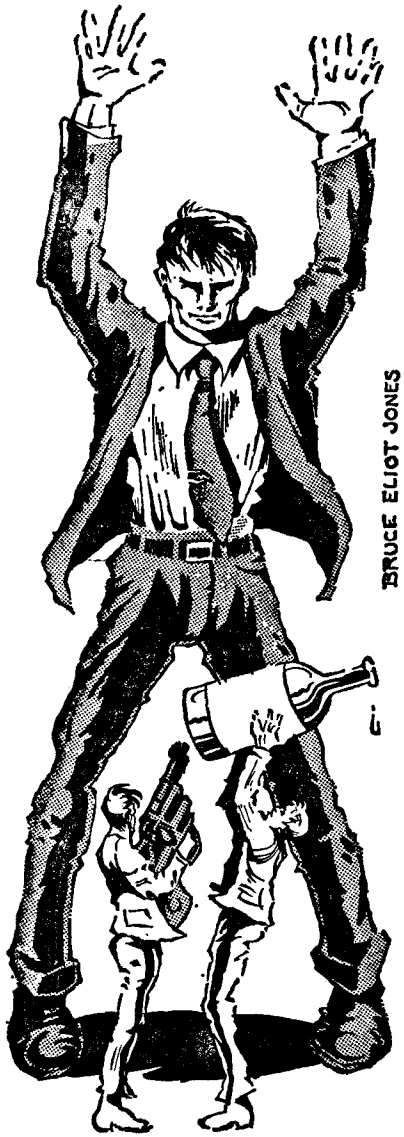
When they reached Major Hauk's office, no one was there.

"This is strange," Captain Lightfoot said.

"Maybe Major Hauk has beaten a hasty retreat," one of the Fnools said. "Does this tall amber bottle indicate anything?"

"That's a tall amber bottle of Scotch," Lightfoot said, scrutinizing it. "And it indicates nothing. However — " he removed the cap — "I'll try it. Just to be on the safe side."

After he had tried it, he found



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the two Fnools staring at him intently.

"This is what Terrans deem drink," Lightfoot explained. "It would be bad for you."

"Possibly," one of the two Fnools said, "but while you were drinking from that bottle I obtained your .45 Service revolver. Hands up."

Lightfoot, reluctantly, raised his hands.

"Give us that bottle," the Fnool said. "And let us try it for ourselves; we will be denied nothing. For in point of fact, Terran culture lies open before us."

"Drink will put an end to you," Lightfoot said desperately.

"As that burning tube of aged vegetable matter did?" the nearer of the two Fnools said with contempt.

It and its companion drained the bottle as Lightfoot watched.

Sure enough, they now stood six feet high. And, he knew, everywhere in the world, all Fnools had assumed equal stature. Because of him, the invasion of the Fnools would this time be successful. He had destroyed Terra.

"Cheers," the first Fnool said.

"Down the hatch," the other said. "Ring-a-ding." They studied Lightfoot. "You've shrunk to our size."

"No, Len," the other said. "We have expanded to his."

"Then at last we're all equal," Len said. "We're finally a success. The magic defense of the Terrans — their unnatural size — has been eradicated."

At that point a voice said, "Drop that .45 Service revolver." And Major Hauk stepped into the room behind the two thoroughly drunken Fnools.

"Well I'll be goddamned," the first Fnool mumbled. "Look, Len, it's the man most responsible for previously defeating us."

"And he's little," Len said. "Little, like us. We're all little, now. I mean, we're all huge; goddamn it, it's the same thing. Anyhow we're equal." It lurched toward Major Hauk —

Major Hauk fired. And the Fnool named Len dropped. It was absolutely undeniably dead. Only one of the captured Fnools remained.

"Edgar, they've increased in size," Major Hauk said, pale. "Why?"

"It's due to me," Lightfoot admitted. "First because of the cigarette, then second because of the Scotch—your Scotch, Major, that your wife gave you on your last birthday. I admit their now being the same size as us makes them undistinguishable from us . . . but consider this, sir. *What if they grew once more?*"

"I see your idea clearly," Ma-

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jor Hauk said, after a pause. "If eight feet tall, the Fnools would be as conspicious as they were when — "

The captured Fnool made a dash for freedom.

Major Hauk fired, low, but it was too late; the Fnool was out into the corridor and racing toward the elevator.

"Get it!" Major Hauk shouted.

The Fnool reached the elevator and without hesitation pressed the button; some extra-terrestrial Fnoolian knowledge guided its hand.

"It's getting away," Lightfoot grated.

Now the elevator had come. "It's going down to the bomb--proof shelter," Major Hauk yelled in dismay.

"Good," Lightfoot said grimly. "We'll be able to capture it with no trouble."

"Yes, but — " Major Hauk began, and then broke off. "You're right, Lightfoot; we must capture it. Once out on the street — It would be like any other man in a gray business suit carrying a briefcase.

"How can it be made to grow again?" Lightfoot said, as he and Major Hauk descended by means of the stairs. "A cigarette started it, then the Scotch — both new to Fnools. What would complete their growth, make them a bizarre eight feet tall?" He racked his brain as they dashed down and down, until at last the concrete and steel entrance of the shelter lay before them.

The Fnool was already inside.

"That's, um, Miss Smith you hear," Major Hauk admitted. "She was, or rather actually, we were — well, we were taking refuge from the invasion down here."

Putting his weight against the door, Lightfoot swung it aside.

Miss Smith at once hopped up, ran toward them and a moment later clung to the two men, safe now from the Fnool. "Thank God," she gasped. "I didn't realize what it was until — " She shuddered.

"Major," Captain Lightfoot said, "I think we've stumbled on it."

Rapidly, Major Hauk said, "Captain, you get Miss Smith's clothes. I'll take care of the Fnool. There's no problem now."

The Fnool, eight feet high, came slowly toward them, its hands raised.

—PHILIP K. DICK

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GOLDEN

If new evidence proves that light speed is not a limit, what will space war be like in reality? And what kind of men will be able to bear and win such wars?

I

Irrelevantly, Commander Yuri Hammlin realized that a pre-star-traveling breed of Man would have been squashed dead by such high push, Never mind that, now, he chided himself. It would take sharp wits and a lot of push to get through this mission alive.

He tensed his big, leathery mus-

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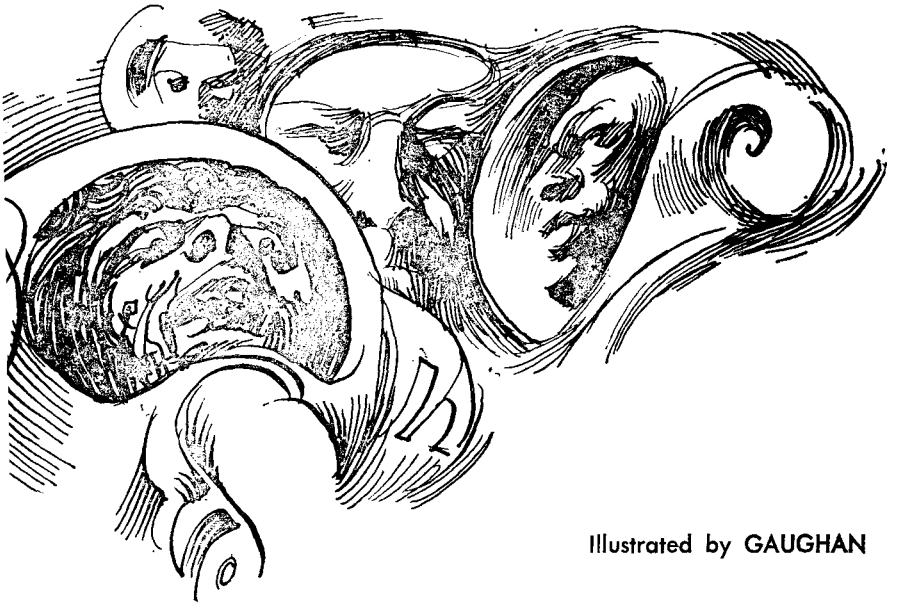

Illustrated by GAUGHAN

QUICKSAND

by J. R. KLUGH

cles and just managed to squirm, without mechanical assist, to a new, more comfortable position in his padded combat pod. Fourteen kilo-g's, he thought, breathing hard enough to feel the pseudo-fluid stir in his helmet. He was adapting well to the push. The crew had been, too. Soon they could up it a little more. They had to stay out of Grakevi disruptor range as long as they

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could. Hmm. He'd better check the range again.

A broad viewset faced Hammlin out of the padding of his coffin-like enclosure. With practiced deftness, he held in mind the sequence of thought forms commanding: *stern view!* Part of the total shipboard software complex known as Shipmind recognized the corresponding pattern of brain pulses picked up through Hammlin's helmet sensors as a command. The starfield astern, out to the standard display range of four hundred light-years, appeared in the viewer. A faint, wavering glow rimmed the edge of the view — the tunnel-like veil of the *Solsmyga*'s ionization trail. Hammlin noticed the slight motion of stars near the peripheral glow.

What's our mean speed of passage?

.58 KILOLIGHTS, flashed the viewer.

Spectral halos displayed around stars further astern dopplered increasingly down-frequency. And in the middle of the view, almost directly astern, gleamed two magnified blips.

Hammlin studied the images of his pursuers. He was glad the rest of that Grakevi task force had finally turned back. Those two were enough. *Shipmind: Range of hostile ships?*

8.78, 8.81 LIGHT-MIN.

They were getting still closer, he thought soberly. Quickly he made sure his ferret ship was maintaining adequate weave amplitude for that proximity. He then ordered a highly magnified view of the Grakevi ships.

The two big images in his viewer were roughly circular, but blurred. They continually faded and shimmered. Hammlin was seeing the impact-glow of space dust off the armored bows of the Grakevi ships. Staring at them, he thought-commanded, *to duty command monitor*: "Bob?"

"Sir?"

"What do you make of them?"

Now I'd say raiders, sir, by their performance. Their mass would put them in the Grakevi equivalent of our Rapier class."

Shipmind! The hostile ships: What mass?

23 KILOTONS EACH.

"Yes, Bob, I think you're right. Okay, that's all."

"Yes sir."

Raiders. Fast, long-range craft. Built for hit-and-run attacks on suns and convoys. And well suited to running down ferrets, Hammlin realized, grimly, Altogether, forty-six kilotons against the Solsmyga's fourteen kilotons. Heavier armor. Bigger disruptors. Either of those two alone could burn them if it catches them. They were taking

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a big chance by just pretending this was a reconnaissance mission.

Hammlin thought of their course ahead. He had studied it to the point that he could picture it in his mind — all the way to Cairnsun. *I hope it was well laid,* he thought, fretfully. Well he knew how drifting matter could obsolesce astrogational files. How dangerous billowing dust could be if they hit it hard enough.

He took a deep breath, and ordered: *bow view!*

The view was hazier than astern. Sensors near the stern had to peer forward through the ship's ionization trail. The bulk of the ship both protected those eyes from dust impact and obstructed the view within a ten-degree cone straight ahead. The ship's weaving course shifted the blind spot about, however, and Shipmind built up a total view from successive sensor inputs.

Stellar spectra shifted increasingly toward the blue. Had the stars not been light-years distant, hardening radiation and hysteresis drag would have threatened the ship. Secondary radiation and dust ionization could be severe, but the Solsmyga's armored hull was built to take it — as long as the dust stayed fine.

Sound me hull impacts! Hammlin thought-commanded.

Shipmind filtered out the squealing spacedrive, the sporadic popping rattle of space dust on the massive, plane surfaces of their bow.

Sparse yet. Not much strain on the pilots. Nearer midpoint, though . . . Hmm. This was a long run to make at high push. They'd be going through it fast.

Okay, cease hull sound!

In the abrupt quiet, Hammlin relaxed for a moment from his restless checking on how his command was running. He was glad that strident ship sounds didn't carry though to his combat pod. Immersed in the pseudo-fluid, his pale, muscular body bare but for plastic helmet and shorts, it would have been torture. The spring-dampened pod was restful, like a womb. Umbilical cables and tubes to his helmet and shorts enhanced the effect.

Deliberately relaxing, Hammlin saw their situation clearly. The HLS Solsmyga had been sighted by the Grakevi task force near a possibly hostile sun. That far Hammlin had fulfilled his mission. And as it turned out, it was a Grakevi sun. The prime planet had been scrambled years before, but Hammlin had detected two underground settlements being started on the next world out, even though it was a marginal habitat. That meant, he re-

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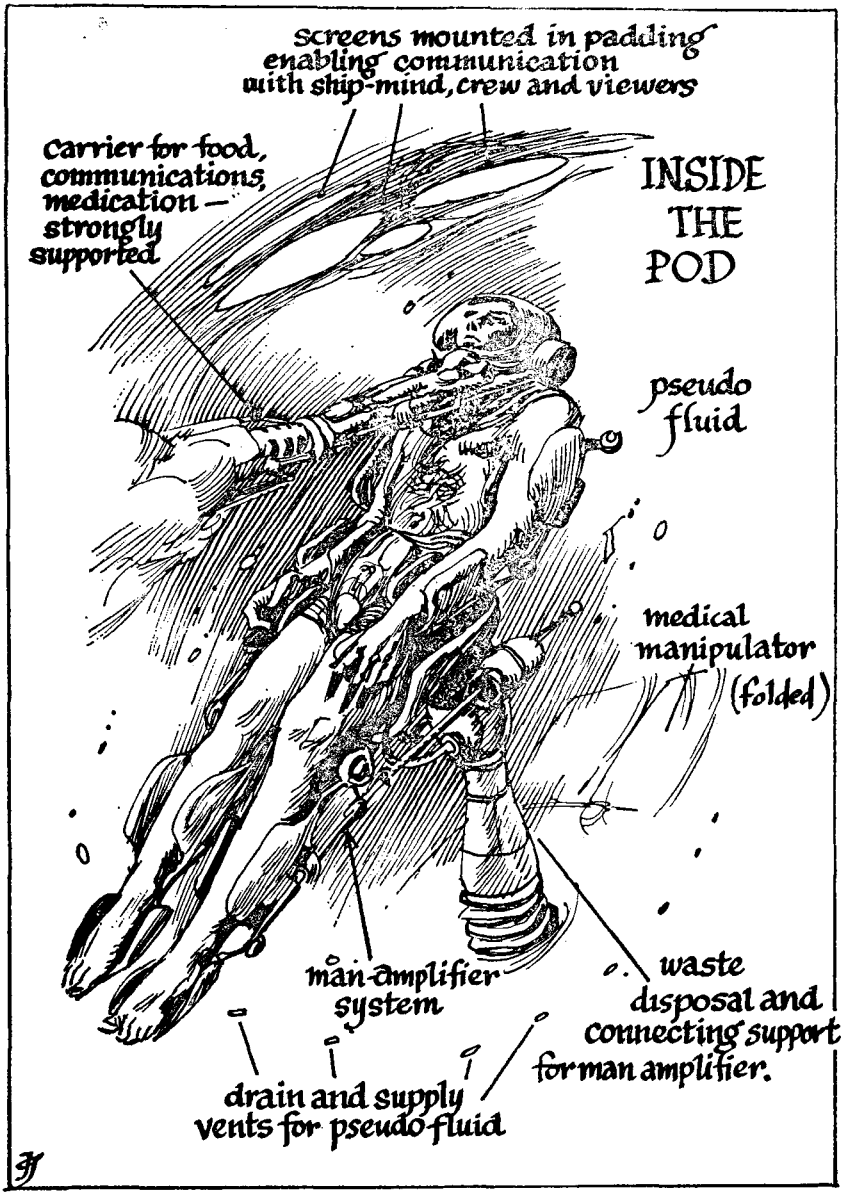
screens mounted in padding enabling communication with ship-mind, crew and viewers
carrier for food, communications, medication — strongly supported
INSIDE THE POD
pseudo fluid
medical manipulator (folded)
man-amplifier system
waste disposal and connecting support for man amplifier.
drain and supply vents for pseudo-fluid

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flected, that the two raiders astern would keep after them, trying to burn them before he could take back word of these settlements.

It was tricky, this pretense of flight, without being free to really try to lose them. And dangerous. Those raiders were hot. A new class of ship, maybe, with prime crews. This would take plenty of skill and push, or they would never reach Cairnsun.

An itch distracted him. Straining mightily against the fourteen kilo-g push, Hammlin slid a hand across his hard body to where he could reach it. Ahh, that felt better, he thought, scratching. Now he'd better see about getting the push up.

Shipmind! Conference circuit; monitors and specialist staff! To body specialist: "Tolefante, I want the push upped again. Any problems?"

"How much up?"

"One kilo-g. Gradually, of course."

Well, from the cardiac traces, I'd say we can take it, but — "

"Fine! Medicate as necessary."

" — But, uh . . . Yes sir."

"Skipper," broke in the hardware specialist, can we hold off the up-push a few minutes? I'm still getting in the repair-module replacement for one of the sternward eyes. Changing push may damage it."

Side circuit to mind specialist! "Burton, those modules are engineered for over twenty kilo-g's, peak. Try to juice up Harley's morale a little more. Subliminal tigering, or something."

"Yes sir. A work engram of his was starting to act up. I'll try to cover it."

"Good!" *Back to conference circuit!* "Harley, we can't put off the push, but it'll be gradual. I've got confidence that you can cope with it, boy. Show me you can take it!"

"Uh, yes sir. I'll try."

"That's the spirit!

"Command monitor," Hammlin went on, "are the Grakevi still closing?"

"Yes sir. And duty jammer just reported changes in their code patterns. Nothing he could break, but maybe they're getting close enough to try something."

"Okay, let's not delay any longer, then. That's all. Get set. Up-push coming!" *Shipmind: End conference circuit.*

Gradual increase to fifteen kilo-g's, mean push!

UP PUSH TO 15 KILO-G'S, flashed a corner of the viewer, and Hammlin heard the warning repeated in his helmet speakers. In all twenty-two combat pods of his crew, he knew, the warning was being repeated.

As the long-range ferret ship pushed harder and harder,

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Yuri Hammlin Commander

Hammlin felt his breath coming tighter. Almost without thinking, he flexed one muscle and then another against the push. It was a hypnotic compulsion meant to speed his push adaptation.

He was glad they were using the new pseudofluid. This MAZ-80 was more buoyant than the old stuff. Good thing he had been able to get some.

A rough mission, this one. Hammlin stared at the viewer. Those raiders weren't dropping back very fast. He checked with Shipmind. So. They were upping push, too. It frustrated him that the enemy should so nearly match his stamina. Any enemy achievement irritated him. "Think they're pretty tough, huh?" he husked through clenched teeth, Their very name was in his mouth a curse. "Grakevi! *Hrrach!*" He glowered at the slowly dwindling blips.

II

Hammlin remembered the day he had been entrusted with this mission. He had been summoned to the office of Shoal-Staff Brigadier Odyn Stuart, back at 5-L Sector Staff Headquarters. At the old man's bidding, Commander Hammlin had eased his big, tough body into a comfortable chair by the desk, but he did not relax, not in Brigadier Stuart's office. Stuart was a percep-

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tive, calculating, strong-minded man, and he set a hard pace. His men never dared call him the affectionately familiar "Ohm" Stuart to his face. Yet now, oddly, the Brigadier appeared to be in a remarkably mellow mood. He praised Hammlin for a recent daring reconnaissance, mused about a happier time — oh, how many years ago — when there was no desperate war situation, no vicious slaughter and counter-slaughter, no scrambling, of planets in a widening no-man's-space. The opposing forces were interpenetrating, he mentioned. Soon Sector Staff Headquarters would be moved further back. And what did Hammlin think of recent Grakevi pursuit tactics?

But presently the Brigadier paused in his probing small talk to regard Hammlin thoughtfully.

"Suppose we came upon a world that seemed ideal for settlement," Stuart murmured, "but on which there was some serious hazard we couldn't detect. How do you suppose we would deal with it?"

For a moment the question didn't make sense to Hammlin, and why had the old man asked it? Hammlin shifted uneasily in his seat under Stuart's shrewd appraisal.

"Well, uh, it would depend on the hazard, I would think"

Stuart was silent.

"How can the hazard be detectable? I don't understand."

"Hmm. Well," Stuart suggested, "suppose this was a planet on which traces of LSD, or some such mind-expending drug, occurred naturally. There would be no way to detect it. The traces would be too slight."

"Yes. but one could infer the presence of the drug from the effects. The symptoms . . . "

Stuart shook his head. "The symptoms are initially too slight, too varied, too erratic. Too many other explanations can be given. In the beginning nothing is even suspected. And yet, over a long time — you see?"

"Uh . . . yes. Yes." How ghastly! In their present desperate need for strength the Helgad League would rush colonists to a promising world as fast as they could be settled. Whole settlements — thousands of the finest people — would be getting smoked. Pathetic! And if the cumulative brain poisoning was severe enough, they would eventually be dying of it without ever realizing that something was killing them. Only off-world eyes would see something amiss — but not in time .

"Yes," said Stuart, watching the troubled look come over Hammlin's broad, bony face. "It can be dangerous. Very dangerous. Especially when you think

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of how long a government can take to react to even blatant facts. And the planet . . . well, such a planet is no good for settlement. But still, it has uses."

Stuart leaned back in his chair. Hammlin's bushy blond eyebrows rose; his deep blue eyes showed question.

"Look," said Stuart, "suppose an enemy power can be lured into grabbling such a prize. Eh? With the right handling, it might be used to bleed 'em of men and supplies for years."

"Uh, yes . . . "

"Say there was valuable equipment there, to sweeten the bait," added Stuart, warming to his subject. "Some partly built settlements. And a weak garrison fleet holding the star." He leaned forward to emphasize: "In a situation like the present one, with both sides hungering for worlds to settle and draw strength from, the enemy would grab eagerly at such a world if we just lured them to it." Leaning back in his chair, the old man added, almost as an afterthought, "The luring them to Cairn — that will be your job."

"You mean . . . you mean this world exists? A planet with LSD — "

"It exists. But . . . maybe it isn't LSD. We don't really know what it is, but there's something there, and it's deadly."

Hammlin thoughtfully rubbed his chin as he turned this over in his mind. The room was quiet, but for the background susurration of Sector Staff Headquarters.

"It's addictive," Stuart went on, running a hand over his close-cropped white hair. "Take a man off Cairn who's been there over six months, Ship Time, and he becomes so accident-prone that he usually gets himself killed. Or he gets sick of something and dies. But once he's been there a decade or two, he's too stupid to even dress himself.

"Yuri, it cost us plenty to find that out. Two million prime colonists lost, not to mention their installations. Now we're going to try to get back the cost of that information. We want the Graks to pay for it. They've taken dozens of suns from us in recent months. Right on this front: Krag, Barnasun, Samli — all gone. We're being pressed hard. Let's see if we can't funnel some of that pressure onto Cairn."

The two men stood up.

"We're counting on you, Yuri Hammlin. Here's your memory card on the Cairn System, suggested tactics, all the data you might need." The older man paused, then gripped Hammlin's shoulder. Lure them to Cairn, Yuri. Hook them on that world. Hook them hard!"

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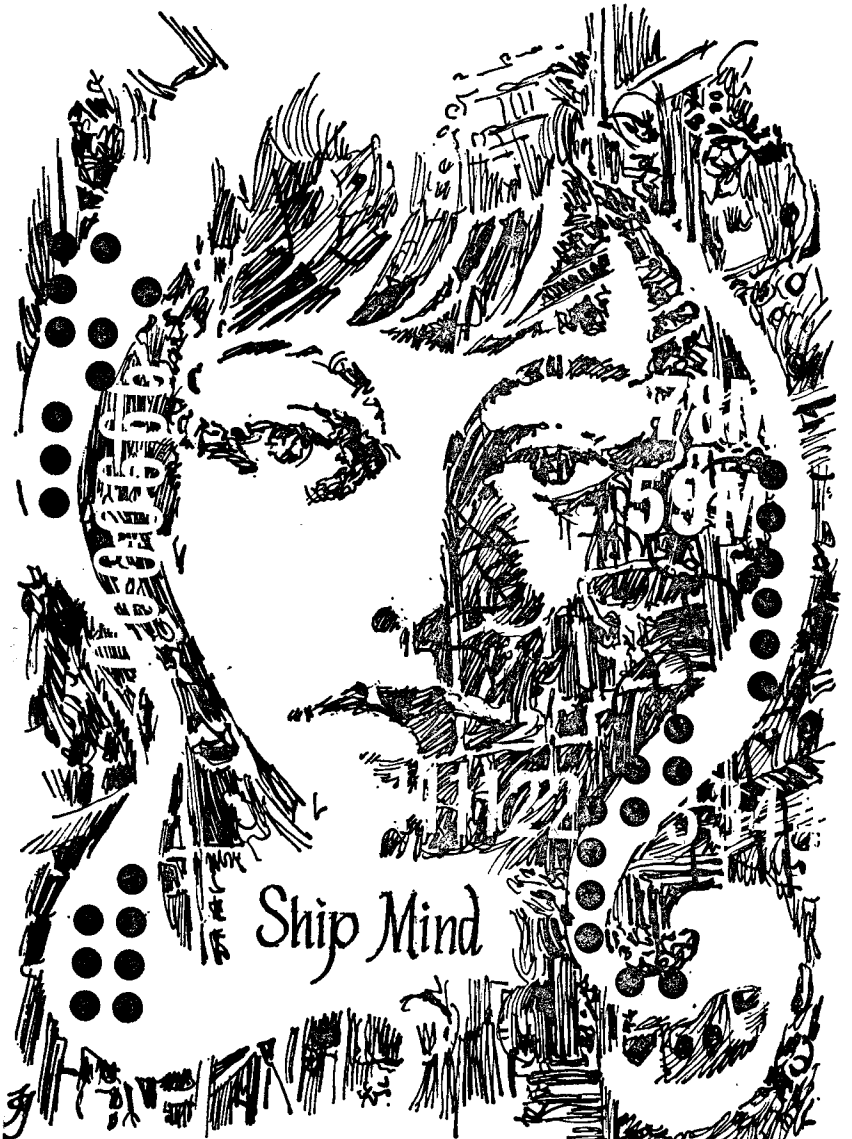

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"I'll do my very best, sir."

"That's what I'll be counting on. Good luck!"

The ship drove on. Hammlin rested, but after a time he roused himself again to check the crew. Third shift, he found, had just gone off duty, to be replaced by first shift. For each two-hour shift, four times a day, one of the three command monitors watched over his two pilots and two weaponeers. Meanwhile, each of the three operations monitors watched through his shift as Shipmind ran maintenance checks on crew and ship. At his call for any complicated maintenance was the specialist staff: body specialist, mind specialist, hardware technician and software technician.

The men seemed to be holding up fairly well, Hammlin reflected. Hmm. He wondered how piloting was going. *Shipmind: Show me duty pilot display!*

Alternating views blinked at him. One showed ahead, and one astern. The views were speckled with navigation codes and course lines. Schmidt was a good man, Hammlin thought. He was showing plenty hunch-power. Good. That was just what Shipmind needs. Checking, Hammlin saw that the co-pilot was up to his task, too.

Seeing then to his ship's defenses, Hammlin next checked on his duty weaponeers. The Grakevi were still beyond effective disruptor range, so the zapper was mainly helping the other weaponeer, the jammer, as he probed the enemy electronically. Hammlin saw the weird designs displayed in their viewsets: spectrum analyses, requests from Shipmind on how best to try to crack codes, dance patterns for target ranging past enemy jamming, and strategies for slipping craze patterns through enemy filtering. With Shipmind listening closely, the two weaponeers chatted conspiratorially, planning ways to do in the enemy.

But, Hammlin reflected, their Grakevi counterparts were planning the same — with the Helgad in mind. And there were more of them. Two raiders worth!

The ship fled onward. The Grakevi fell back again, for a time, as the ferret pushed harder. Then they began to creep up once more. Hammlin meditated battle tactics.

A stern chase, he thought. An adaptation contest, as usual. They were keeping to the high side of optimum push for fastest crew adaptation: just short of immobility. The Grakevi couldn't push much harder without pilot gray-out. And pilot intuition was necessary to hold a clear course at these kilolight speeds.

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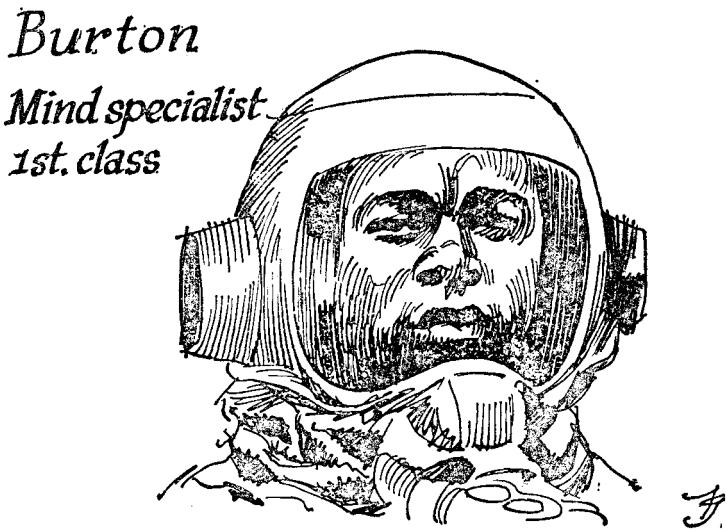

Now, when the Grakevi got within effective zap range . . . Hmm. Weaving would make hits unlikely, at first. And most of the energy would be reflected off the sharply sloping sternward armor. At most, a few ship eyes would periodically be temporarily burned. The disruptor batteries were well shielded within the fluke notch. As the Graks got closer, though, the Grak disruptor flashes would burn hotter and hotter, he reflected. Each coherent flash, a searing pulse pattern keyed to hull absorption frequencies, could at closer range boil off centimeters of armor, leaving a smooth, shiny depression where it hit.

We had to avoid letting the Graks get close enough to be likely to hit with those big disruptors, Hammlin thought. Evasive maneuvers, chaff, jamming, flares, plasmoids — anything to confound them, to keep them at a distance until men reach Cairnsun. If men can make it to Cairnsun, if they reached the Helgad garrison force there . . .

The Solsmyga had reached a push of 16.5 gilo-g's when the Grakevi raiders struck. Hammlin had just awakened when —

DUTY COMMANDER MONITOR, announced Shipmind.

"Skipper, something odd here. They're still almost two light-

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minutes away, but we're starting to get continuous disruptor ranging pulses. Duty jammer's been picking up new intership com. Says he thinks they just went on stereo zap-control."

"Uh, Donovan?"

"Yeah. First shift's on. Those Graks are ranging us like they mean business."

"For how long?"

"Couple minutes."

Hammlin finally came all awake with a start as he realized the situation: *Shipmind! Go to mid-zap range battle weave! Duty crew to full alert! Bring next shift up to standby alert!* The viewer blinked acknowledgment. *To command monitor*: (Harry, I smell a trick! Get set!)

"Right!"

To duty operations monitor: "Any limp in the works to allow for?"

"No, skipper. Ship's tight."

"Good."

MACHINE STATUS: COMBAT READY.

Good. Shipmind was on the job. Hammlin's viewer showed excess power from the two fusion chambers bleeding off the hull radiators.

CREW STATUS: COMBAT READY.

Now to see what those Graks were —

HOSTILE PURSUIT IS ZAPPING.

Hammlin heard the characteristic scratchy splatter of disruptor pulses in his helmet speakers. But why? They were till too far away. *Shipmind*: *Show me stern view! Report uncommon hostile action.*

Hammlin studied the two weaving, twinkling spots in his viewer as she thought-commanded: *To duty command monitor*: "Harry, what do you make of it?"

CREW REACTION TEST: ONLY ENGAGEMENT RANGE UNCOMMON, reported Shipmind in the edge of the viewer.

"Don't know, sir," said Harry Donovan. "A feint, maybe?"

"Could be." Had they just meant to spook him? Hammlin asked himself. Had he strained the crew unnecessarily? Had he lost us some tactical advantage?

"Shall we cut back to range-limit weave, sir?"

"Ah . . . yes, Harry — but do it slowly. Uh . . . how's ECM?" *Shipmind*: *Give me bow view! To duty co-pilot*: "Feel there's anything ahead that they could be trying to herd us toward?"

"Nothing fancy in ECM yet," answered the command monitor.

"No, sir. Course feels okay right now," said the co-pilot.

What should he check now? Hammlin asked himself, closing his eyes in silent concentration. What could it be?

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"Duty zapper's ranging, just in case," the command monitor went on. "Jammer's feeling them — hey! They're zapping out of focus! Too broad to even burn the ship eyes. Wonder what hap — "

III

Through his closed eyelids Hammlin saw a flash of light on the viewer. A violent nervous jolt painfully twitched his body, dazing him. He gasped. His heart pounded.

"Craze pattern," he groaned, with waves of clammy chill running over his skin. *Craze pattern! Shipmind, CRAZE PATTERN!!! Filter it!! Block it! Quick, filter it! A craze pattern! Don't let another one through!*

Panting, Hammlin fought to calm his trembling. His eyes remained tightly shut against the possibility of another flash. It could kill him. Had Shipmind managed to set blocks against another one?

He had to act fast — the Graks! What were they doing? He needed information! But . . . only . . . The viewer! Was it craze-blocked?

That had been a visual pattern, Hammlin thought. A powerful one. He shuddered at the memory. Even with his eyes closed, he had got it bad! What had it done to the crew. Was anyone else left? Had Shipmind set up craze blocks? What was the ship status? How could he find out without getting killed by another flash if he looked at the viewer? The helmet speakers! That was it! He'd get an acoustic report.

Only, what if part of that craze pattern was acoustic? Calling for sound might bring it through. What should he do?

Hammlin squirmed on the edge of a cold sweat. His hands fidgeted abstractly. He tried to visualize the present state of the ship. Could they have crazed Shipmind? Might they be about to? *Shipmind: Beware of similar-method crazing attempt on Shipmind!* Hammlin wondered if there there was any Shipmind left to get his thought command. If they would get Shipmind, he couldn't do a thing. He was helpless!

But wait. The ship was still at high push. Yes, and it was weaving, although it felt kind of jerky. How come? Pilots knocked out, probably. Or maybe something the Graks were doing. At least part of Shipmind must be up — he hoped! Hammlin swallowed anxiously. He had to get communication!

He'd have to take a chance on the acoustics. If the Graks knew they'd got the Helgad . . . They must know! They must be pushing all they could to close in and finish things!

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He had to act! But, if there was an acoustic craze . . . He had to do it! Almost convulsively, Hammlin thought-commanded, *Shipmind: Report status acoustically!*

"SHIP STATUS IS — IN COMBAT," reported Shipmind in its clipped feminine monotone.

Hammlin let out his breath. He was still alive! Good old Shipmind! he thought. It was still up!

Are filter blocks set up against repeat visual crazing?

"CRAZE BLOCKING ACTION TAKEN."

Hoping it was effective, Hammlin cautiously opened his eyes. *Shipmind: What is crew status?*

"CREW STATUS IS—FIRST SHIFT, ALL CASUALTIES. SECOND SHIFT, ALL CASUALTIES. THIRD SHIFT, ONE CASUALTY. THIRD SHIFT NOW GOING ON DUTY STATUS. SPECIALIST STAFF ONE CASUALITY."

For a moment Hammlin lay in numbed silence. The greater part of his crew was out! *Are they dead?*

"ALL CASUALTIES ARE LIVING, BUT ARE UNCONSCIOUS."

So. Maybe they still had a chance. Maybe enough men would recover to crew the ship through. But right now, they were in bad trouble. Even third shift was incomplete. *Shipmind: Who's the casualty on third shift?*

"THIRD SHIFT CASUALTY IS JAMMER SECOND CLASS MURPHY."

So all his jammers were out. *Who of the specialist staff is out?*

"SPECIALIST STAFF CASUALTY IS MIND SPECIALIST FIRST CLASS BURTON."

Burton! Just when the need for him was greatest! Just then Hammlin felt the ship's weaving course becoming less jerky. *Shipmind: Did the third-shift pilots just get on-line?*

"STATUS OF THIRD SHIFT PILOTS IS — ON DUTY."

Good! *To duty co-pilot*: "Pomeroy?"

"Yes, sir."

"Did the craze hit you? How do you feel?"

"I'm okay, sir. I was asleep when Shipmind called me on duty."

"Fine! You and MacKinzie — don't strain yourselves. You may have a long shift. The pilots on the other shifts are hurt."

"Yes, sir. We'll spell each other to make it last."

"That's it! Now, take it as easy as you can."

"Okay, sir."

To duty command monitor: "Bob?"

"Yes sir. Zeitlin here."

"Did Shipmind say your view-

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er was safe? Have you looked astern?"

Uh, yes, sir. I just came on. Shipmind said emergency."

"That's right. The Graks got a craze pattern through." He hoped the stern view was craze-blocked on his viewer. He had to chance it. *Shipmind: Give me a stern view!*

Hammlin blinked defensively as the view popped into his viewset. He was breathing a little fast, and very much aware of what could have happened if his viewer hadn't been craze-blocked. But all he saw were two weaving blips twinkling brightly among the stars.

"Hadn't we better up push a bit, sir?" Zeitlin suggested.

Range of hostile ships?

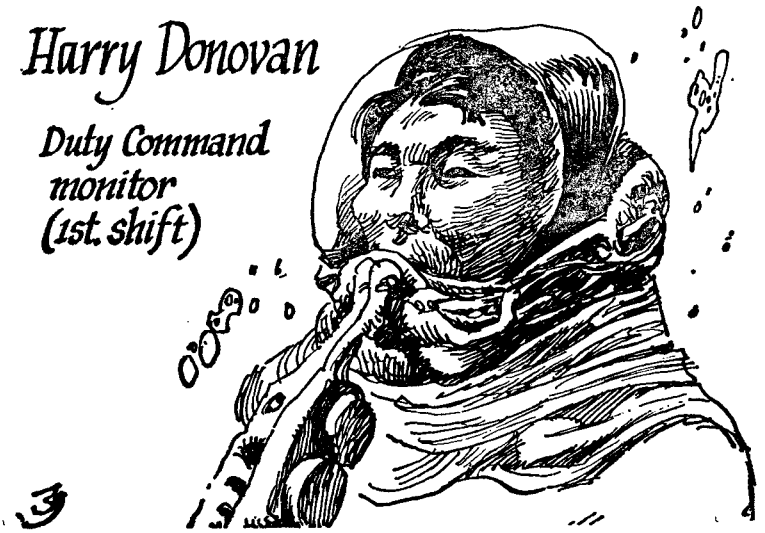
48, 52 LIGHT-SEC., gleamed a corner of the viewer.

So much closer since this had happened. A little more and they might have gotten everyone. They still might.

"Yes, up it, Bob. You take it. Try to keep them back beyond a light-minute. But try also to not strain your shift too much. The other two shifts were knocked out, and I don't know how long you'll have to be on."

"Okay, sir. I'll do my best."

"Good!" *To body specialist:* "How are the casualties?"



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"Sir, all the casualties are unconscious. Some are in serious condition. I haven't had time to check them all specifically, yet. Shipmind is running suggestive first-aid and breath-input medication already, of course. They show symptoms of a very severe recent trauma. In fact — "

"Make it snappy, Tolefante. How's Burton?"

"I hadn't gotten to him yet, sir," answered Tolefante, sounding hurt.

"Well, get on it! We need him badly."

"Yes, sir. If that's what you want, sir."

Surly, smart-aleck pup! He was straight out of med training, and he thought he knew everything!

To software technician: "Vledervoe, you running down that craze pattern?"

"Yes, sir. A bad one. I caught a little of it myself."

"How do you feel?"

"Okay, sir. Not much of it came through this viewer."

"That's a relief. Now look — here's what I want you to do: First, make sure Shipmind is filtered so we don't get another one in the same way. Secondly, get fixed up any damage the one that got through did to Shipmind. And finally, find out how the Graks did it. Let whoever's standing in for duty jammer know as soon as you find out. Got that?"

"Uh, yes, sir," answered Vledervoe, uncertainly. "That's what I'm doing. But you don't mean strictly in that order, do you?"

"Do it any way it goes fastest, but those are the priorities."

"Very well, sir." Vledervoe sounded relieved. He was very liberal-minded. After years of software experience, he thought almost like Shipmind.

To duty operations monitor, Hammlin thought-commanded: "Otto, are you on?"

"Yes, sir."

"What damage did the Graks do while we were out from that crazing?"

"Is that what it was, sir? Uh, not much, it seems. A playback shows that Shipmind was on its own for only about a couple of minutes. During most of that time it shows the Grak disruptors were awfully weak, or out of focus or something. They only shined through the radar camouflage in a couple of places. Hardly took any armor off.

"The bow armor is kinda pocked up, though. Down three centimeters in places. Not serious on eighty-centimeter armor."

"We still have a long way to go." said Hammlin, quietly.

"Yes, sir. That we do."

"Otto, you better leave the hardware pretty much to Harley for a while. I want you to give

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Tolefante all the help you can with the crew. Keep him moving. We're just riding on third shift. No reserve."

"Okay, sir. I'll do that."

"Good man."

Hammlin paused a moment, reviewing the situation. He had to conserve himself, too, he realized. There was no telling how long they would take to deal with the emergency. He noticed that he was pressing harder into his pod padding. Oof — Zeitlin was really getting the push up, he thought. Must be that the Graks didn't want to lose range. This was plenty strain. But leave the man be. He'd better see what Tolefante has found out by now.

Shipmind: To body specialist: "What have you found out, Tolefante?"

"Burton just regained consciousness, sir, but he's in bad shape. He's babbling incoherently."

Shipmind! Give me mind specialist pod view and sound!

DIRECTIVE 478: FOR OPTIMAZATION OF OVERALL VESSEL EFFECTIVENESS, MORALE OPTIMAZATION OF THE COMMANDING OFFICER SHALL HAVE PRIORITY A17.

PERSONNEL MORE QUALIFIED THAN THE COMMANDING OFFICER ARE AVAILABLE TO AID CASUALTY TREATMENT. SHIPMIND COMPUTES AVOIDANCE OF COMMUNICATION OF THE COMMANDING OFFICER WITH BATTLE CASUALTIES AT OR ABOVE PRIORITY A17. YOUR LAST GIVEN ORDER IS REJECTED. — SHIPMIND.

Of all the blasted nerve. Some nardy bureaucrat made rules, and he couldn't get to his men! *Hrrach!*

"Okay, Tolefante," said Hammlin, grimly. "You take care of him. You fix him up good, and you do it fast! I need that man!"

"Sir, I'm the body specialist, not — "

"I don't care what you call yourself! You're supposed to be cross-trained in Burton's specialty as well. If you can't remember your lesson, ask Shipmind!"

Hammlin snapped off contact with a brusque thought-command, and lay silent in his combat pod to let his temper cool.

After a moment Shipmind announced, FROM DUTY OPERATIONS MONITOR: (Uh, sir? I thought — maybe you'd want to know about the other casualties?" It was Otto Zagorsky, sounding very meek.

Realization came to Hammlin that the operations monitor had been monitoring Tolefante, as his task required, and had heard it

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all. It annoyed and chagrined Hammlin that he had displayed his temper thus — to the possible detriment of the ship — but it was done and past, now.

"Yes, how are they?" he asked in a more even voice.

"Well, sir, apparently the pattern going through the first shift jammer viewset was the worst. Beck is in a coma. It's bad, sir."

Zagorsky paused cautiously. Hammlin waited.

"The rest seem to be gradually coming out of it, sir," Zagorsky went on. "They look like they were having nightmares. Some worse than others. Except for two: Leinster and Stewart. They are conscious, but not making much sense. We're running some of the therapy routines in Shipmind to them, and to the others, too. It's helping, but I don't have much idea how long it'll take. Too bad we don't have Burton available. He could work the therapy a lot better."

Yes, well . . . Do your best, Otto. Burton especially. And see about juicing up Tolefante's morale, a little if it'll make him any faster. Shipmind just sassed me, and I blew up at him."

"Yes, sir. I'll do that, sir."

"Good. That's all."

So, thought Hammlin, staring thoughtfully at the blanked viewset. Leinster and Stewart: the second shift pilot and zapper. But would they recover in time? Would enough of the others? If they didn't, he knew, the exhaustion of third shift would leave the ferret a robot, without a crew. It would lack the intuitive skill, the feel for the situation that was needed to avoid most of the dense space dust and Grakevi zapping. They would never reach Cairnsun. The mission would fail.

It must not fail. Too much depended upon it. Ohm Stuart was counting on him!

IV

Days passed. The continual sizzling splatter of disrupter pulses sounded in Hammlin's helmet speakers. He'd better leave that sound a while, he thought exhaustedly. It would keep him reminded that those Grak raiders were just light-seconds behind. Knowing the danger would help keep him awake.

The high-push swerving of the ship jarred him. Fourteen days in combat, he mused. It was telling on all of them.

If only their luck held. It was not long to midpoint, now. If they could just make it through midpoint . . .

His body ached. He could only move without mechanical assist during moments of down-push for doppler evasion. When the ferret up-pushed again, the strain

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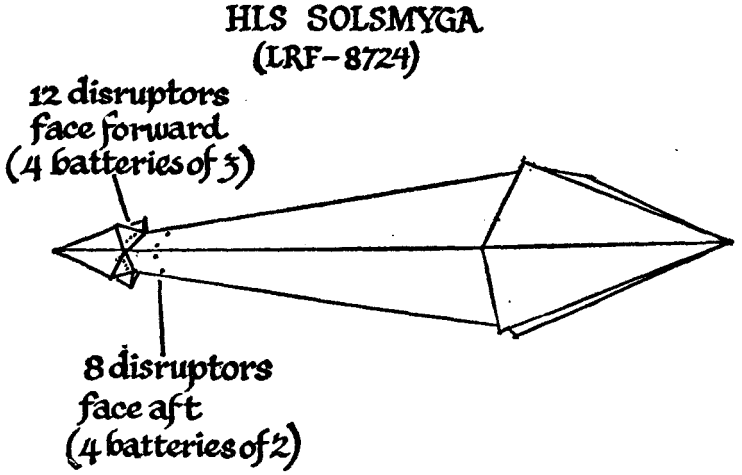
hurt him. He felt that he was starting to get bedsores.

Peaking to eighteen kilo-g's, now, he reflected. To the genetic limit of their adaptability. Up peak push much more, and it would kill them — as it had killed Pomeroy already.

He was the second loss so far, Hammlin thought, remembering the third-shift co-pilot. Beck had been the first to go. Beck, the jammer on first shift, had never come out of coma after the Grakevi craze pattern hit him. He had lingered three days, then perished as the ship jerked about, dodging violently, to avoid being zapped as it darted through a narrow gap opening across a dust cloud.

Hammlin's sense of duty urged him to see to his men, again. *Display summary of crew health,* he thought-commanded. Studying the data which appeared in the viewset, he was dully saddened by the ultimate state shown for Beck and Pomeroy. How many more, yet? He wondered. Would any of them make it? Who could know. They'd try, though. They had to try.



Hammlin absently rubbed an itch high on his bald scalp against the inside of his helmet. That felt better.

At least the rest of the crew had pretty well recovered, he thought. It was slow, but a big relief all the same. It had been hard on them. That opening craze pattern had interfered with their push adaptation.

It was a near thing, for a while,

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Hammlin remembered. With third shift becoming exhausted, and the other two shifts still very shaky, he had had to juggle along on the last bit of endurance of first one man and then another. Building back up from that ordeal had been difficult. The Grakevi had never let up.

Shipmind: Show stern view, again, Hammlin ordered. He studied the motions of the zapping raiders. Abruptly the viewset blanked protectively as a nuclear flare shell went off. Seconds later the view faded back in to show the fireball falling faster and faster toward the raiders. They swept by, dodging easily, and it dwindled into the distance.

Shipmind: How long until midpoint?

MIDPOINT COMES IN 132 MINUTES.

Hmm. It didn't seem like such a short while since he had last checked. Maybe he was getting tense. Well, there was no time just to lie here fretting. He had to see how Shipmind was coming with midpoint tactics calculation.

Hammlin tried to help Shipmind, but it was hard to concentrate in the jouncing combat pod. His back felt sore where it had pressed too long into the padding.

Shipmind announced, FROM SOFTWARE TECHNICIAN: "Uh, Skipper?"

"Yes, Vledervoe?" He sounded badly tired, too, thought Hammlin.

"I found out the rest on what that craze pattern did," reported Vledervoe in his dry, studious voice. "Or anyway, about as much as could still be found out."

"What is that?"

"Well, as I mentioned before, when they keyed that craze pattern through their disruptors, the pulse hit the outer overhead eyes hard enough to crosswalk over to the second-level visual reduction lines before it would have reached the first set of block points."

Circuit logic diagrams showed on Hammlin's viewer Hammlin quickly contracted them to just a corner of his viewset so he could also keep watch astern.

"Uh, it also apparently jumped from the VR lines to the overhead VR disc-waffle leads," Vledervoe went on. "That's how it got into number three visual buffer an F tier. I was mistaken before when I said it came straight through the VR lines. The second-level VR lines have filtering on CJ10 level. In fact — "

"Wait, there," Hammlin interrupted. "Have you told duty jammer?"

"Uh, the jammer — yes, sir. I just did."

"Okay. Now then, what remains to be healed up?"

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"Well, it went through Bank 74, mucking it up. From there it spilled into the end of viewset interface storage. At that point a machine hypnotic translated and took control of three autoprocessors. Uh, yes, I'm pretty sure it must have been three of them. That is, the read-around dump digest showed — "

"I'll take your word for it," said Hammlin impatiently.

"Uh, okay. Well, the parasitic unfolded and spilt craze pattern through most of the duty switches in the last eighteen interface buffers. The primary association channels in those buffers are all lost."

"Hmm. How bad is that?"

"Uh, well, I'll have to splice new association linkages for Area 40C as soon as I can find the subject needs. Most of the thought routines that were clobbered are on the system back-up library, so there's no problem there, but M5578LL is changed, and I'll have to rig up a new one.

"Overall, I mostly just have to take care of interpretation to the viewset displays, yet. Two or three days more, and I should be finished. Most of Shipmind functions that were affected are working now. We just have to look out for a little interpretive amnesia at random moments until those linkages are going through again."

"Hmm." Hammlin considered. "We're reaching midpoint soon. To what extent would you say this, ah, amnesia will hamper us?"

Vledervoe thought a moment. "It'll be all right," he concluded. "The combat report functions are all running. It's just that stellar background codes may not update promptly at times, for instance. Or hull thermal displays.

"Shipmind knows what they are, but presentation may be off," Vledervoe added.

"Can't we, uh, sort of tap through to the right information?"

"It's not as simple as that. The build-up functors have to get the same data the crew gets, for feedback to cerebral telemetry evaluation. Otherwise crew reactions will start running up reaction error in Shipmind."

"Oh. Well . . . you say we'll get essential data through midpoint, though, huh?"

"Yes, sir. No problem there."

"Okay, well, let's have it fixed as soon as we can. But keep yourself ready for any emergency damage we may take getting through midpoint."

"Yes sir."

Hammlin broke contact. That Vledervoe! he thought. Good thing he knew his stuff. Hammlin didn't know the half of what he had been talking about. Like

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Burton, with his mind-oriented jargon.

A good thing Burton had soon recovered enough to help. The boys had picked up a lot faster after he was able to start directing therapy.

That had been a hair-raising episode, Hammlin remembered: Tolefante, Zagorsky and Shipmind hanging on with what advice Burton could give between delirium and fainting spells. Shipmind had even got worried enough to let him in on how it was going on. Hah!

In the viewer, eerie little lights flittered through space astern as disruptor zappage cut through puffs of dust where chaff spells had exploded. Despite long familiarity, the sight fascinated Hammlin.

Presently he closed his eyes to rest them. He became aware of his tiredness, again, and he felt itchy. What a strain he thought. Then —

FROM DUTY OPERATIONS MONITOR, announced Shipmind: "Skipper? Adler here."

"Yes. Go ahead, Izzy." He was in better shape than most, Hammlin noticed from the voice.

"Sir, we just lost another sternward disruptor. A pulse came through the rotary shield just as she bore. Messed up the laticing. The electron-focused optics are all shot."

"You mean it won't take sharp focus?"

"No, sir. And reflection is so far off that it could burn out if we overrode and zapped it anyway."

"Mmm. Okay, better shut it down and close the shield."

"Yes, sir."

"That's three out of eight, now."

"Yes, sir. Just minor occlusion on the other five. They're still bright enough to give a good burn."

"Okay. See that they bear close and hot at midpoint. It won't be long now."

"Yes, sir. They're ready for fast tracking."

"Good. And how's midpoint checkdown coming?"

"Okay, sir. Almost finished."

"Fine. Run me a damage summary when you're through."

"Yes, sir."

Hammlin broke contact. He sighed. Five sternward disruptors left, he thought. Well, they would not be needing the sternward batteries much longer. Not after midpoint.

In the viewer, distance made even the nearer stars seem to flow sedately, though their mean speed was almost three kilolights. He couldn't remember ever passing at this high a relative speed, before. Hammlin felt a bit of a thrill as he watched. This was a

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long run they were making this mission.

Compared to the ferret ship and its pursuers, the stars were almost stationary, relative to each other. At midpoint the ferret would have to reverse the push — to begin slowing — if it was to come to rest with respect to Cairnsun on arrival. But when the moment came to slow, what of the pursuing raiders?

Shipmind: How long now to midpoint?

MIDPOINT COMES IN 78 MINUTES.

It would be dangerous, Hammlin reflected. He could only hope they came through it.

The view astern flickered incessantly, now, as enemy disruptor pulses came close. As the range had shortened, the ship's dodge circle relentlessly contracted. The big, bright disruptors the raiders mounted weren't missing so often, anymore, nor by so much.

FROM DUTY OPERATIONS MONITOR: "Sir, here's the damage summary."

"Okay, thank you, Izzy."

The report appeared in Hammlin's viewer. He studied it thoughtfully. The drive seemed to be holding up well, he noted, reassured. All gyroplasms were swinging smoothly.

Primary fusion chamber was ticking a little out of tune,

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though. He'd have to watch that.

He studied the sonic hull trace a long moment. It showed most of their sternward-sloping radar muffling burned away, but that didn't matter. What worried him was the thinness in places of their sternward armor, especially on the fluke. Maybe it would last, he brooded. If they burned through before midpoint . . . With a taut sigh he went on to the rest of the report.

The damage to Shipmind from that first craze pattern penetration had been reported by Vledervoe already. A second craze pattern had got through a day later, and for a time it had silenced all their disruptors, but that damage to Shipmind was already repaired. At least they had got one back at the Graks, Hammlin thought, remembering how, for a few seconds, one of the raiders had lost push, almost dropping out of the chase. The Graks on that one really must have sweated to catch up again, he hoped.

The weaving of the ferret jostled him about in the viewset-lit gloom of his combat pod. In his tiredness, the pseudofluid felt chilly, but he dared not order the temperature raised. Nor would Shipmind probably have obeyed, he realized, for in that greater bit of comfort he might fall asleep. despite the ravening enemy behind them.

V

Hammlin felt an itch on his thigh and wondered if he could reach it at this push. It was cold as a tomb. "Hmph!" he snorted. He was getting down. Better have Burton juice him up with a little more vim. See to it, *Shipmind*. The view blinked acknowledgment. Oh, that itch! Hammlin started working a hand toward it.

In the viewer, he saw glowing coveys of erratically darting plasmoids fall quickly astern. More followed them as they vanished. They weren't much of a threat to the enemy, Hammlin thought, but at least they helped confuse his zap-control.

The itch went away before he could reach it, leaving him vaguely frustrated. He stirred in his mind, wondering what to attend to next.

Shipmind: How long until midpoint?

MIDPOINT COMES IN 59 MINUTES.

Operations monitor finished his midpoint checkdown, Hamlin reminded himself, slowly. The ship was as ready as it was going to be. The crew . . . uh, first shift was on. *Shipmind, we better go over to second shift a few minutes — uh, seven minutes — before midpoint. Keep first shift on active back-up through midpoint, so we*

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don't lose continuity. Have third shift at emergency standby.

Hammlin yawned. Then, rousing himself, he wondered, if he had given those orders before, already? He couldn't quite remember. Could he have given conflicting orders. Hmm he didn't know. Oh, well, Shipmind could figure it out. It was a good thing Shipmind had enough judgment to allow for the state of the ship's complement in obeying orders. He felt rotten.

EAT, ordered Shipmind.

Dully, Hammlin obeyed. The slurry he sucked through his helmet nipple had several peculiar tastes in succession, before it finished coming. Hammlin waited for a bit, and belched. His beard had grown beyond bristliness, and he could feel his breath stir it in the pseudofluid. Familiarity dulled his senses to within bare toleration of the cesspool flavor of the pseudofluid. Gack, it was strong. A man could almost tell how long he'd been in combat by the reek. They ought to hurry up and redesign these pods to stay clean no matter what.

The ship had put drugs in his nourishment, and his grogginess cleared somewhat. The urgency of the situation took hold of him. Not much time left!

Shipmind: Did you take my crew disposition? The viewer blinked acknowledgment. So. Hammlin considered the effects of the impending assignments on his men. Harry might take it a little hard if he pulled first shift off just before midpoint, he reflected, picturing Low Commander Harry Donovan's bluff personality in his mind. He might get the idea that Hammlin didn't trust him for the big moment. It might hamper his effectiveness. Hammlin didn't want that. He was their best command monitor. It wouldn't do to go building his ego up to the extent that the others ultimately felt low, though. Hmm.

Well, he'd see. *Shipmind! To duty command monitor*: "Harry, I'm glad first shift has been holding up so well. I know it's a strain on you, by not having Beck to handle jamming, but for the sake of continuity do you think you can stand back-up to second shift through midpoint?"

"Why, uh, sure. We'll stand duty spot if you want."

"Thanks Harry, but I'll want a fresh shift carrying most of the load. No reflection on your shift, mind you."

"Okay, sir. As you say."

That was a relief, Hammlin thought. Having done what he could to reconcile Donovan to a subordinate role, Hammlin then went on to have a word with the others of his crew. With occa-

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sional advice from Burton, he tried to prepare them for peak performance.

MIDPOINT COMES IN 16 MINUTES, flashed the viewer.

Shipmind, Hammlin knew, was weighing the merits of assorted midpoint gambits. As the tactical configuration varied, Shipmind was opting for first one, and then another. When midpoint came, it would execute its choice of the moment.

It was good to have Shipmind for such tasks, Hammlin felt. And yet . . . and yet, Shipmind wasn't absolutely infallible. Depending on it too much made him uneasy.

The flickering viewer showed him the two flashing blips astern weaving to and fro against the stellar background. The obstructive ejaculations behind which the ferret tried to hide itself dropped toward the foe and beyond.

He wasn't getting enough feel of their weave, Hammlin sensed, as he studied them. He needed more detail. *Shipmind: Insert second-order weave codes!*

Additional symbols appeared by the Grakevi raider images and also superimposed on the wavering ionization veil at the margin of his view. Reading them, Hammlin grasped better the why of their current motion.

All three ships were jerking about in random evasion, but the ferret was also trying to stay in the blind spot directly ahead of first one raider and then the other. The raiders pitched and yawed to bring their forward-facing disruptors more nearly to bear straight ahead, but they couldn't wag too far over without space dust scouring their disruptors, quickly ruining them.

As the raiders swerved, both to avoid possible mines in the ferret's wake and to bring their disruptors to bear, the ferret swerved also. Sometimes it swerved away, forcing the raiders back toward it in pursuit. Sometimes it swerved with them, trying to stay in a blind spot. The dance went on and on.

Still watching, Hammlin thought forward to midpoint. Surprise was the essence in this, he reminded himself. If they could reverse push unexpectedly enough to get past the raiders before they could begin slowing much, the men had a chance. They would surely go by too fast for the Graks to have time to burn the ship badly.

On the other hand, Hammlin realized only too well that if the raiders began slowing almost as soon as the ferret, their pace would almost match that of the ferret as it passed them. There would be a furious exchange of disruptor pulses which the smaller, weaker ferret could not hope to survive. As they cut through it, and the ship sensed dire in-

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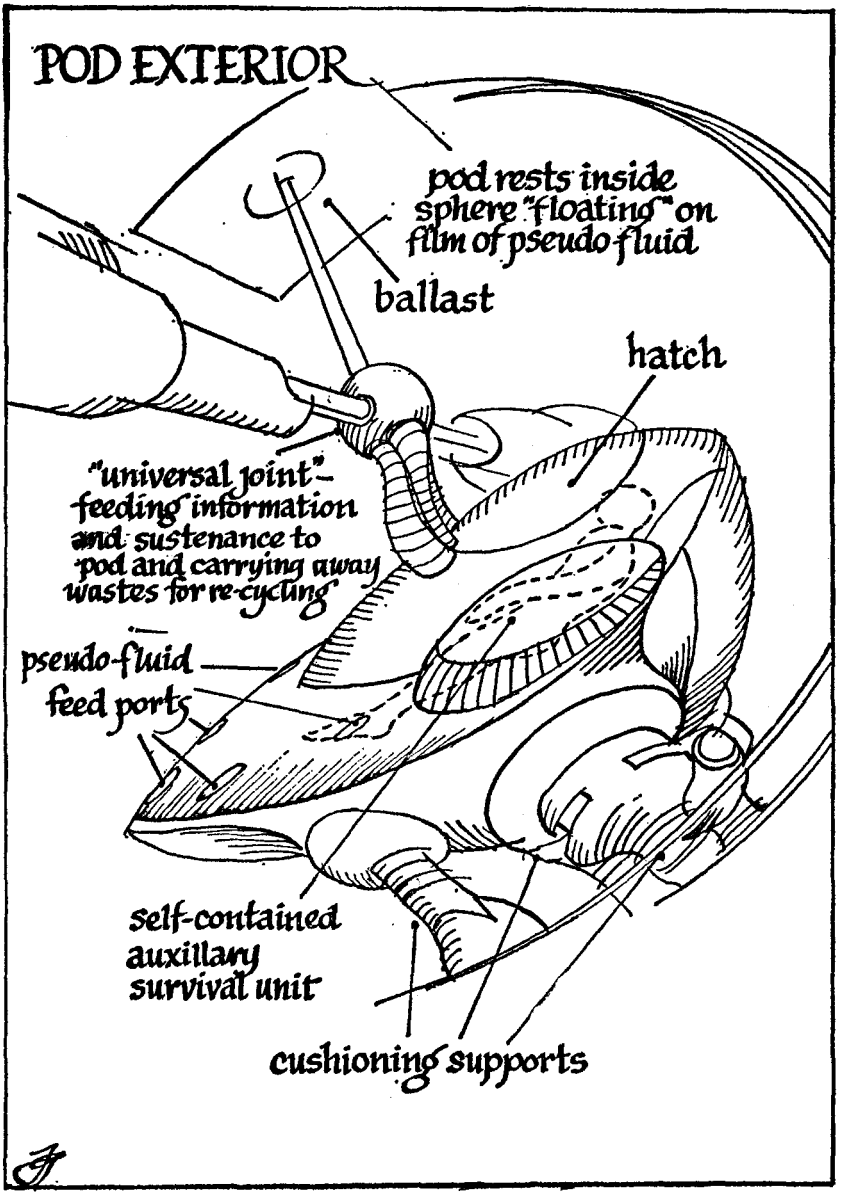
POD EXTERIOR
pod rests inside sphere "floating" on film of pseudo fluid
ballast
hatch
"universal joint" - feeding information and sustenance to pod and carrying away wastes for re-cycling
pseudo-fluid
feed ports
self-contained auxillary survival unit
cushioning supports

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jury, capture-safe circuits would trigger both fusion chambers and nuclear munitions, and the ferret would be no more.

Hammlin didn't like that thought. This wouldn't do! *Come on, Shipmind: Give me a little more subliminal optimism.*

EUPHORIA IS NOT CONDUCIVE TO MIDPOINT SURVIVAL.

Hammlin stared at that message in the viewer. *Cheerful, aren't you?* he grumbled inwardly at Shipmind. *Huh!*

ASSISTANCE, PLEASE. CONSIDER THIS MIDPOINT OPTION.

Okay, okay. Slave driver!

But then the thought of his responsibility, of his command, stiffened Hammlin's self-discipline, and he brought his able military mind to bear in quest of flaws to the gambit shown in his viewer. Abruptly he remembered: There wasn't much time left!

The minutes ticked by, and gradually Hammlin helped Shipmind work out an optimum envelope of strategies. When midpoint came, the ferret would try to slip back down its own wake, darting through a screen of chaff puffs and interference shells laid down a moment before.

If we could slip down the blind spot of at least one of them . . . Hammlin advised, engrossed. *Hmm. But not so much chaff, I think. We don't want it to tip them off.*

And that trigger pattern for the echo shells looks a little obvious. How about —

THE TRIGGER PATTERN GIVES MAXIMUM PLASMOIDAL OCCULATION FOR A STAGGERED REVERSE-HORVATH DEFENSE HELIX.

— Oh, I see. Okay. But do it a little more this way. Hammlin thought-sketched in the viewer. Shipmind made changes. Finally, they compromised.

Another thing, Hammlin added: *We could fire a couple torpedoes for extra interference. We mustn't overly risk knocking the Graks out, though. We still have to lead them to Cairnsun.*

The thought gave him pause. It was awfully risky, this business, he reflected, uneasily. Like a hare entrapping foxes.

Well, let's see . . . one torpedo astern, just before midpoint, to hide us as we go off push. Then another one right after midpoint to blind them momentarily as we close — as we thought we were diving out of sunlight. Yes, that should do it. Got that, Shipmind?

The viewer blinked.

The ferret still carried eight of its total allotment of seventeen torpedoes, all fitted with standard 7000 megaton warheads.

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They were for slow, unwary prey, being low push (twelve kilo-g's), short range (eight light-min.) and stupid (strictly robot control).

Shipmind, you better launch another one in auto-pursuit, now, so the one at midpoint won't warn them, Hammlin thought-commanded. He glimpsed the bulky torpedo as it popped out. Like a shot it vanished. The viewer blanked.

When the view faded in again, he saw a bigger, brighter glow than that given by the flares. Maybe that one dusted their disruptors, some, he hoped as he watched. The raiders swung aside fast as the fireball fell past. Every bit helped, but he wished they could mess up the Grrak sternward batteries. The Graks would be zapping the bow planes, if the men made it through.

He'd better take a last quick look around, now. *Shipmind! Show me bow view!* The viewset showed hard starlight shifted as far to the blue as Hammlin could remember ever having seen it. Some of that was coming through the shielding, he noted. Good thing they were about to start slowing. In his helmet speakers, the impact of space dust against the hull was now a rattling roar. Even the ablative paste oozing out of the armor capillaries could not keep the hull from eroding at this pace, he realized. Trying to minimize it had been putting a hard strain on the pilots. Well, it wouldn't pit so fast, by and by —except for disruptor zappage.

Shipmind! Now give me jammer view!

From the viewer a torrent of information gushed at him in the form of seething three-dimensional color patterns. The ships radiated ECM and ECCM back and forth like savage beasts screaming and snarling at one another. The enemy was echo-ranging continually, but during the delay across light-seconds of space, the ferret warbled push, to doppler away from the absorption frequencies to which incoming disruptor pulses were keyed. The raider zap-control systems calculated probabilities and compensated for spectral shift as best they might.

ECM echo shells further hid the ferret by bouncing out a profusion of false returns. Variably programmed echo delay and frequency shift made the little echo shells hard for the enemy to discount.

Plasmoids, chaff and flares further dirtied the view. Shipmind analyzed the spectrum to the extent that could be expected of quick but dull robot calculation. To this the jammer added his skilled human perception.

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The duty jammer ID code flickered, and Hammlin glanced at it. Sorensen had just gone on, he noted. Second shift was phasing in. Less than seven minutes to midpoint!

To duty command monitor: "How're you feeling, John?"

"Good enough, sir," answered Line Officer 1C Mortensen, steadily. "Burton ran second shift through a tone-up just before we came on."

"That's fine." And he was feeling pretty good, himself, come to think of it, Hammlin realized. Burton must have done him subliminally, too.

"Uh, Harry's backing you up, you know, but he put in a hard shift. It'll be mostly up to you."

"Yes, sir. We can manage. We are in good shape."

"That's what I like to hear, John. We're — "

MIDPOINT COMES IN 4 MINUTES. NOW STARTING FINAL COUNTDOWN.

In Hammlin's viewset shone a representative of the familiar statue, *Helgad Man, Embattled.* From his helmet speakers came the opening notes of *We Fight.* That gave way to a stirring strain of *Heroic Ever Onward.* The hymn faded away, leaving behind a crackling splatter of disruptor zappage, and the statue dissolved into the view astern.

"Grakevi — *hrrach!*" Hammlin spat his hatred in a snarling hiss at the pursuing blips. *Shipmind! To crew*: "This is it, men. Let's show those Graks what it's like to close on Helgad fighting men!"

Thinly, despite the push, the crew growled back its common challenge. The sound gave Hammlin a shivery thrill.

3 MINUTES TO MIDPOINT.

Hammlin felt himself growing more taut, excited. He strained and squirmed, levering himself to a new position in his jostling combat pod. Beyond the occasional distant thrumming of shipboard machinery, there was now silence. A steadying tone-up pattern showed in the viewer. Anything more to suggest to Shipmind? Hammlin wondered. Had they overlooked anything? No . . . not that he could think of.

2 MINUTES TO MIDPOINT.

Hammlin and his crew cleared their minds for fast action. Ship and men merged strongly into a single fighting entity. Hammlin lay passively ready to give his quick reaction on whatever Shipmind chose to show in his viewer.

1 MINUTE TO MIDPOINT.

The muffled pattern of cannonfire seemed to change as they muddied their wake. In the viewer, Hammlin saw a torpedo flick away. They were counting on that thing, he thought. He saw an inside-out view of the sternward hull, all shiny from disruptor

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Screen-view after mid-point

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GOLDEN QUICKSAND

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zaps. Ho! Not much chance of their burning through there any more!

MIDPOINT.

VI

The viewer blanked. The push went off. Hammlin gulped. The pod swung around on its spring-dampened gimbals. Abruptly the push surged on again. The viewer glimmered back to life.

Six seconds ticked by and the raiders came sweeping around the torpedo fireball — still at high push. The ferret hurtled toward them, like a shell down an endless succession of cannon barrels. The raiders began to slow. They started to roll, and their disruptors flashed like Gatling guns.

Stay in a blind spot! thought-bellowed Hammlin, shaken before such a storm of zappage.

The ship jittered, as though hesitating at the order, then plunged into full view of both raiders.

Why, why? Hammlin felt helpless in the face of doom. It was a high-speed nightmare. Why had they left the ship's wake?!

ATTEMPTING TO SKIRT NUCLEAR BARRAGE.

Oh — yes, I see it, now! We won't make it!

The ferret jerked in violent evasion of disruptor zappage.

Hammlin wondered if the crew could take this?

Around the edge of the view appeared contorted, bearded faces. Then appeared another portion of the crew, also staring wide-eyed as the enemy swelled toward them. A final push-strained group grimaced from the viewset and was gone.

The ship was fighting with computer haste, and everything seemed to happen at once. No time to think — hardly even to give Shipmind one's snap feelings.

The ferret hit the fringe of the nuclear flare barrage. The barrage lit up, and the ferret streaked through nuclear brilliance. The ship hit a near miss with a jolting lurch, and Hammlin caught his breath in agony. He barely saw the raiders flash by in a blur, zapping wildly. And then they were past.

It had happened so quickly. Hammlin found himself shaking. His heart was pounding. He began to flex and strain his big, aching muscles, working out the tension, and discovered some sprains. At least he was still alive, he thought, wryly. But what shape were they in? How badly were they hurt?

Shipmind: Show me a damage report!

Hammlin made a quick check of the ship.

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They had been holed in three places on the sternward hull. One gouge was too big for the healing mechanism to plug entirely, and uncoagulated meteor absorption fluid streamed from the lead. That would drain that panel, Hammlin realized. No trouble there, now, but it could be a problem as they approached dirtier space near Cairnsun.

And there was radiation leakage in seven outer compartments. Well, they would just have to make do with it.

Now, how about the crew? *Shipmind! Report crew status!*

CREW STATUS: FIRST SHIFT—2 CASUALTIES. SECOND SHIFT—0 CASUALTIES. THIRD SHIFT — 3 CASUALTIES. SPECIALIST STAFF — 2 CASUALTIES. OTHERS TOOK MINOR DAMAGE BUT ARE STILL COMBAT-ABLE.

Oh oh. They had been hurt all right. *Shipmind*: *Identify and state casualties.*

FIRST SHIFT:
PILOT 1C SCHMIDT ..... DEAD
ZAPPER 2C PEDERSEN ..... UNCONSCIOUS
THIRD SHIFT:
PILOT 2C MACKINZIE ..... UNCONSCIOUS
ZAPPER 2C GROLLNEK .... UNCONSCIOUS
JAMMER 2C MURPHY ..... UNCONSCIOUS
SPECIALIST STAFF:
BODY SPECIALIST 2C TOLEFANTE ..... UNCONSCIOUS
MIND SPECIALIST 1C BURTON ..... DEAD

Both the medspecs! That was bad. It would be up to the operations monitors and Shipmind, now, unless Tolefante recovered. He wondered how badly Tolefante was hurt. Second shift was on. *Shipmind*: *To duty operations monitor*: "Gordy, how badly would you say Tolefante is hurt?"

"Uh, Tolefante . . . So-so, sir. Some torn muscles. Rather painful. And internal hemorrhaging — but it's almost contained now. He may be a bit crippled, but he should recover."

"Okay. Thanks Gordy. Now, how about the others?"

Line Officer 2C Gordon Frazier reported similar, though mostly less severe, injuries of the rest of the casualties.

"Okay, Gordy," said Hammlin as he finished. "You're doing all you can to get them back in shape, right?"

"Yes, sir. The other op monitors are helping too."

"Okay, that's good. Carry on."

"Yes, sir."

Hammlin thought of his wounded. He had snapped impatiently at Tolefante on several occasions, and now, with Tole-

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fante hurt yet needed, Hammlin felt uncomfortable. Tolefante just didn't seem to be made for this kind of service, Hammlin reflected, defensively. If he got through this mission, Hammlin would see about transferring him out. Yeah. That was what he'd do.

Seven more men were out, on top of two earlier dead. Hammlin hoped he could juggle crew assignments to keep the ship adequately manned until more recovered again. But then, he could expect more casualties, at this high push. Manning the ship would get progressively harder.

Well, at least they had gained a respite. The Graks had gone clear beyond effective zap range before they matched.

The ship struggled on. Hammlin's command patched and healed itself as best it might before the reapproaching Grakevi raiders engaged again. Grollnek was the last to regain consciousness. He was out thirteen hours. The steady recovery of his five injured men cheered Hammlin, but he also thought of the dead.

Poor Schmidt, Hammlin lamented. That midpoint jerking had been too much for him. They had missed him. He had been a good pilot.

And Burton! They had depended on him so. Could they manage themselves through the mission — could they reach Cairnsun — without him?

Hammlin tried to ignore the bleak emptiness he felt at the loss of each of his men. Beck — his mind blasted by the Graks. And now, three more they had pushed to death. *Grakevi! Hrrach! But just wait and see, you — you Graks! We'll pay you back, yet!*

Three days later Cowles died. His combat pod malfunctioned. One of the pseudofluid filters sprang a leak, and he perished slowly, gasping, as the pod pressure went down and the push squeezed him flat. Hammlin shuddered at the memory of how he had looked — before Shipmind cut off the view. Cowles was the second-shift copilot.

It was hard to think straight, now, and to direct the ship. This push was hurting them all, Hammlin realized. MacKinzie and Grollnek, especially. Those two, the third shift pilot and zapper, were in anguish from cumulative internal injuries. Nothing more they could do for them, Hammlin regretted. Beyond what emergency pod medication Tolefante could give, there was no help for them.

This awful push was really what was killing them, but he had to keep at high push if any of them were to survive. The

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Graks were hounding them to the limit of endurance.

Hammlin felt a special bond with Helgad men who had fought thus at high push. Only the hardiest survived such engagements. It was from such survivors, the toughest veterans, that new breeding stock was drawn in settling new worlds. The best of the best! Hammlin liked to express it. And two million such comrades had perished on Cairn. In vain? No! They would never fail their honored fallen, Hammlin promised himself. He glowered his hatred at the two spots of twinkling disruptor light in the viewer. And he ached of the push of eighteen kilo-g's.

Ever more slowly the three ships dropped toward the brightening gleam of Cairnsun. The patter of space dust became gentler, sparser. Shipmind could steer with less human assistance. It had to.

Of the ferret's crew only a couple at a time still managed d ly to watch their viewers. The est were sunk in painful stupor. The Grak crews must be in about as bad a shape as they were, Hammlin guessed, or the raiders would have exterminated the Helgad by now.

Could they still make it? That oscillation of the primary fusion chamber was getting worse. Bit by bit it was losing output pow-

Tolefante body specialist (3rd shift)

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er. He doubted they could keep the drive at push on the secondary alone.

The ferrett continued to lurch evasively, stirring eddies in the fouled pseudofluid of Hammlin's combat pod. He felt sick. It was an effort to keep his stomach steady.

Trying to maintain a feel for the tactical situation, Hammlin kept a bow view and hull scanning trace in most of his viewer. He listened to the scratchy splatter of disruptor zappage. He was tired and on edge.

They were taking hits oftener, he fretted. Would the forward armor last? The Graks were so close now — just a few light- seconds ahead of them.

Hammlin watched as Cairnsun continued to approach in the distance beyond the craft of his enemies.

Don't launch torpedoes, yet, he cautioned Shipmind. *Don't signal the garrison too soon. First give the enemy a long, close look at the system. Yes, that's the way.*

Only . . . only, he wondered how much more of this they could take?

He was exhausted. He lost consciousness for a few minutes. Slowly, under Shipmind's stimulation, he recovered.

Hammlin studied a crew health summary in the corner of his viewer. Poor Gordy Frazier — he was dying, Hammlin grieved. He could be the ninth. Eight men they had already lost. Eight men — rotting in their pods. Well, it wouldn't be much longer —

A small puncture appeared at the edge of their forward armor.

Shipmind! Signal quickly — now! Hammlin snapped. *Before they zap through that hole!*

Their three last torpedoes flipped out and were gone. As seconds went by, the ship roused the crew for one last effort.

Why didn't the torpedoes go off? Hammlin worried, fearing that the Graks had zapped them all?

He wondered desperately how they might yet gain time. More chaff and echo shells? No — they were already down to the last of them. Dodge harder? A little more push? But they couldn't stand any more push!

Far down, well beyond the raiders, a bright burst bloomed. Beautiful! Hammlin crooned to himself. Just beautiful. Now if they could hold on a little longer . . .

The ferret dodged and zapped feebly. Taut minute followed minute. Then the bow was holed again — a bigger gap, this time.

No! thought Hammlin, staring. The next hits would gouge right through them!

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But then the raiders were shifting away. They had had their look, and meant to get clear of Cairnsun before Helgad interceptors got out to them.

And the Grakevi vessels passed beyond effective disruptor range, the ferret ceased dodging and eased off the push somewhat.

"Ahhh!" breathed Hammlin, relieved. That felt much better! Creakily, he began to move and rub himself. His body was sore and stiff.

In the viewer he saw five interceptors appear far ahead. Already they were veering fast toward the fleeing raiders that the ferret was pointing out. They had to make it look real, Hammlin reflected with satisfaction. Must not let the enemy suspect. And then, at last, he could peacefully sleep.

VII

A year and a half had passed, and Hammlin lay sprawled in a transport berth, luxuriating in idleness. The transport was pushing along at an easy fifty g's. This was the life, he thought with a happy sigh. He had earned his reward.

The Solsmyga had been two months at Cairnsun for emergency repairs. Then, with five passengers hitching rides in their spare pods, and nine coffins frozen in the third afterhold, they joined a passing convoy back to 5-L Sector Staff Headquarters.

The ferret ship had won a unit citation. The entire crew received the Everlasting Hero Seal. Hammlin was awarded the Seal with Crossed Comets. And he was promoted to Colonist, with the rank of Lieutenant-Patroon. That rank entitled him to eleven wives, and a stake of thirty-eight gold kilograms.

Enough wealth to make a good start, Hammlin mused, absently patting the hard, smooth ripples of his stomach muscles. Enough for a large spread of ranch land, perhaps. Or maybe part ownership in some business.

And eleven wives — oh, man! He could just see them! Hammlin pictured in his mind's eye the fair, bold-eyed, strapping young women he had seen from time to time in news reports as they started on their way to colony worlds. Smart, hard-working and patriotic, they were said to be. The pick of planetary forces finishing industrial service.

Mmm, delightful! Hammlin nodded to himself, stretching what he imagined to be a lusty grin across his face. The fatherhood urge was already strong upon him.

Now, on the way to Geyn, his future homeworld, Hammlin had been taking programmed courses

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on investment and personnel management. They seemed well-designed courses, Hammlin judged. He was learning a lot from them. Only . . . well . . . He simply had to face it: He hadn't known a real woman in years. Just the simulators, between missions.

That was hardly adequate familiarization, he was sure. He needed pertinent preparation. But — what was he to do? The nearest thing he had been able to find at the PX on dealing with wives was this office-oriented personnel course.

So how could he apply such stuff in this case. Hammlin worried it over, perplexed. Were wives, uh, like secretaries — but with added functions? Or were they a kind of . . . of subordinate manager, only intimately female?

Or what?

And how could a man best discipline them? What should he do if there was interwifely rivalry? Blast it, this husband thing was going to take some doing!

Hammlin squirmed on his berth — almost as though he were in combat pod, preparing to engage Grakevi.

Yet, when he had conscientiously tried to find out by asking around, what did he get. He snorted. Big laughs, and nothing more. A lot of big laughs. Bah!

Hammlin scowled at the gray bulkhead above him, but slowly a wry smile glimmered through his annoyance. The crew was pretty funny at that, he realized, remembering the cautious kidding, the sham concern, the suggestions offered in mock seriousness on how best to cope with his future responsibilities. Even Brigadier Stuart had smiled a trifle broadly as he congratulated Hammlin at the formal award ceremony.

It was a lovely medal. And the last mission with the Solsmyga had been completely successful, the Brigadier confided, later. A strong enemy fleet rushed to Cairnsun within months. In fact, to the Grakevi the sun was of such high strategic value that, according to Helgad intelligence, the enemy had started building up Cairn headquarters planet. But they would not guess the reason for the difficulties they'd soon start having. Helgad raiders would see to it that they suspected sabotage, instead.

Now that was good news! Hammlin smiled, with satisfaction. Cairn would really be an experience for the Graks! He was glad he was not going to a world like that. He propped his massive legs up against the railing of his berth and thought soberly of how it would be on Cairn.

Of course, he mused to himself,

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the cost would be fantastic, certainly, but if the Graks packed enough people onto Cairn, they might in the end get a surviving population that was immune to whatever the hazard was. And then what? Would the adapted people be even more formidable?

The possibility alarmed Hammlin. How could men win, he asked himself, if disaster, survived, only made their enemies stronger?

Hammlin worried at the question. Presently, out of his pondering crystalized a hint of an answer: *Men must be stressed, too,* he concluded. The Helgad must up push on their own evolution. They must evolve faster than the Grakevi!

Yes, yes, he grumbled to himself after a moment, but how? Deliberately scourge themselves? No, that would weaken Helgad solidarity. Men would tend to turn on the source of torment. It would have to be an outside affliction imposed upon them.

"Huh!" Hammlin snorted. How could they arrange for that? And how could they control this uncontrolled hazard so that it would not wipe them out altogether? How could they set it so their suffering gave them the greatest possible evolutional advantage over the Grakevi? How could they even know what trend would turn out to be an evolutional advantage?

"Hmm," he muttered, thoughtfully. "Let's just see, now . . . "

Completely left out of reckoning, for a time, were his dreams of a softer life ahead. With the thirty-eight kilograms of gold, the eleven wives . . —J. R. KLUGH

If you give up cigarettes, you might gain a few pounds.

(And also a few years)

The plain, unfiltered fact is that people who smoke cigarettes get lung cancer a lot more frequently than nonsmokers.

And lung cancer can finish you. Before your time.

We'd rather have you stay alive and well.

Because even if you do gain a few pounds, you'll have the time to take them off.

american cancer society

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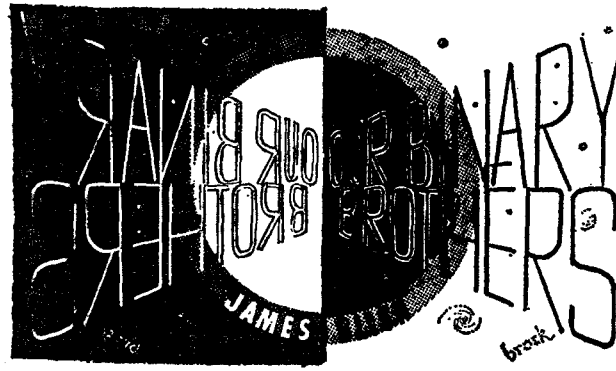

He'd given the Earth every chance, and it had failed him. Now he was on another Earth, facing a new life!

As usual, there were two of the Ranidae standing guard outside the temple, waiting for the god to make his appearance. Huge, brownskinned, and ninety per cent humanoid they were; the only visible differences were the rather ropy hair and the blank eyes — actually, eyes covered with a nictitating membrane, for the Ranidae had evolved from a nocturnal order of creatures and found the light of their own sun almost too fierce for them.

Dane found it pretty fierce himself; by now he was almost as brown as they were. Rana's sun was a dwarf, but on the other hand, Rana was only forty million miles away from it. Even up here in the northern mountains the temperature hit eighty by mid-afternoon. And come to think of it, his own red hair had gotten pretty ropy by now, too, along with his mustache. He had not had a real haircut or a proper bath in three years.

He looked out. The guards were fiercely imposing in their vermillion ceremonial harness, the chest of which bore a dimly glowing sun-disk. That, however, was deceptive. The Ranidae were actually rather a gentle race, as well as an impressionable one. They had their share of personal quarrels, but apparently had not had a war for nearly a century; nor did they have any real

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nations, only clans. The battle-axes the guards carried were in observance of this, for technologically the race was quite up to producing ballistic missile weapons; they simply hadn't had any need to invent them. Otherwise, they seemed to be in a state of development roughly corresponding to that which had been attained by Europe and the United States circa 1895.

Dane put on his pressure suit, except for the helmet — ceremonial trappings, after all, were expected of him, too — and started the airlock cycling. It was time for the daily apparition. Nearly a century of progress to lead these people through; that was a heavy responsibility, even for a god.

That was why thus far, he had limited each apparition to only a few minutes. He meant to take it slowly. The mess "progress" had made on Earth was not going to be duplicated here — not if he could prevent it.

But he had hardly emerged from the temple when the guards bracketed him, like a salvo of muscle. "What's this?" he said, as steadily as possible, considering that he was outweighed by better than four to one.

"You must come with us, Divine One."

"Who says 'must' to me? Why? I refuse."

They paid no attention. "You must come with us," the first speaker said patiently, and together they began to herd him — not obviously, but firmly — down the mountain.

He gave up protesting. God or no god, he abruptly felt peculiarly puny.

It is nowhere recorded in the sacred books of Rana that the god's full name was (or rather, had been Anglicized to) John Hillary Dane, nor that he had been born the son of the chief of state of a Balkan duchy which had once — in the Middle Ages been an empire. Nevertheless, steps were taken early to prevent his becoming a mere duke. When he was nine years old, his country was swallowed by the Soviet Union, and he found himself in the United States, on his way instead toward deification.

It did not take him long to reject the even lesser role of prospective head of a government-in-exile, but only in favor of a smoldering aloneness which made him first a poet, then a Wellsian utopian, then a Trotskyite, then a pacifist, and finally — the only logical outcome of all these taster and influences — a mathematician specializing in communications theory, cybernetics and related disciplines. These sciences were then (toward the end of

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World War II, when he had just turned 21) in their infancy, and Dane — immune to the draft by virtue of a diplomatic passport —grew with them. Shortly he had talked his way into the presidency of a very small company which made light-amplifying devices for astronomers, and turned these devices into a line of self-focusing three-dimensional cameras for dub photographers which made him a multi-millionaire before he was thirty.

Which did not assuage his dissatisfactions in the least. He did not even convert the passport; citizenship did not tempt him. Though he had been up on the mountain, he was sure he was meant to go higher.

While he deliberated, without knowing that that was what he was doing, his already large firm had become involved with the military and had become a giant. Thanks to several additional and basic inventions of his own and of a highly imaginative chief engineer, fully eighty per cent of its sales were now to the Department of Defense. And of these, about half turned out to be remarkably adaptable either to spying on other people or to keeping dossiers on them. He did not hold himself wholly responsible for the concomitant creeping change in American life, and by infection that of the rest of the world; but he could not absolve himself.

Much more immediately, the rewards of the world now included a wife who had changed somehow (the fault was perhaps his) from a fairy-tale princess into a managerial witch; a daughter who had taken to hopping from pad to pad in a black sweater and sawed-off chinos with her only valuables — her toilet articles, chiefly Pills — in a brown paper bag; and a son who, after a brilliant record at a tough private school, had gotten himself thrown out of Kenyon for losing interest in everything but Art Nouveau and loud guitars.

Unlike most gods, Dane did not know that he had already been crucified. He took a mistress; she was a girl of considerable complexity and warmth, she loved him totally, and she bored him green. In a final attempt at compensation (though, again, he did not know that that was what it was, let alone that it was final), he turned to philanthropy on a large scale, handing out massive endowments and subsidies to projects which marginally satisfied his now-buried utopian streak (though he was not aware of this motive, either). In self-defense, the family tried to have him committed as incompetent; and still — since he defeated the move so easily — he failed to get the point.

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And then, abruptly he did.

One of his philanthropies had been the underwriting of a 200-inch telescope in Chile; and one of the first discoveries of the completed, $30-million observatory had been that the Sun is a double star. The dwarf companion is about the same size and brightness as Proxima Centauri, and it is about 12,000 AU — or about a sixth of a light-year — away; its year is 1,300,000 Earth years, so that its proper motion is one second of arc per year; and there are more than nine hundred other stars in Earth's sky which are brighter, every one of them farther away. Until Dane Observatory had become functional, it had never even been mapped before, let alone suspected to be a companion of the Sun.

And a tell-tale wobble in its orbit showed that it had one gas-giant planet at least as big as Jupiter — and might have more and smaller, worlds.

John Hillary Dane's star did not rise in the east. It had always been there, standing over the South Pole, invisible, even its proper motion disguised by the precessing of the equinoxes.

One year and nearly a billion dollars later, there was no longer any such person on Earth as John Hillary Dane. Three years after that, John Hillary Dane was a god, going down a mountain between two axemen.

"I do not believe in the gods," the Panechruse said, perhaps a little defiantly. "I quite understand, Isser Dane, that you are most powerful in knowledge, and perhaps in force. But I have also a more than good guess where you come from, and I can't allow you to mislead my hill tribes any longer. We are not so advanced in the sciences as you; but we are no longer superstitious. Should you do us the credit of granting us that, we'll be prepared to defer to you a considerable distance. We need you, certainly. Equally obviously, you need us. You are a long way from home."

The Panchruse was undeniably impressive. So was his city, which would have compared favorably with any carefully planned Earth capital of, say, the late 19th Century; and his seat of government was startlingly reminiscent of a clean Paddington Station. That is to say, it looked much as the Crystal Palace must have looked just after its completion, unsmoked by time, undestroyed by fire. There were not so many arc-lights as the Crystal Palace must have had — the Ranidae's eyesight could not have tolerated that many — but all that, a style of engineering

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quite as muscular as the Ranidae themselves.

Even more impressive was the language, as easy to learn as Esperanto, here far closer to being universal than Esperanto had even hoped to become backhome, much more abortive of new words, and in the hands of a man like the Panechruse, almost frighteningly more forceful. Though Dane had never found the six other languages he knew nearly as satisfactory as English, he did not miss English on Rana.

He picked his response very carefully indeed.

"I would be interested to hear," he said, "just where you do think I come from."

"From a planet of our companion star," the Panechruse said. "We can easily see . . . "

(Had Dane after all brought his helmet, which would have kept him continuously in touch with the temple computer, he would have been saved a great deal of headwork in converting Ranan metrics to his own on the spot. Briefly, from Rana, Earth is 17.4" away from the Sun, or perhaps 100 million miles, and seems to have an albedo of about 0.7 — 20 percentage points too high. From this, the Ranidae guessed its minimum diameter to be 20,000 miles including atmosphere. The Radinae worked all this out backwards from studying Jupiter, which from Rana is 1'29" degrees of arc away from the Sun and hence easily resolvable.)

"Very precise," Dane said.

"We are a scientific people. You will understand that we were in some doubt as to whether so large a planet could support life, but we realized that we might be over-estimating its size; it is too close to your sun for us to photograph."

"You did, by more than a hundred per cent, even counting the atmosphere. In fact, of our ten planets, *only* ours supports life."

The Panechruse nodded briefly. "But that is not the issue. I tell you this only to demonstrate that were not as backward a race as my hillmen might have led you to think. We've made rapid progress, especially since the invention of the steam telephone made fast long-distance communications possible."

Dane wondered if he somehow mis-translated, then dismissed the problematical telephone as a technicality. "I congratulate you," he said.

"We require much more. We would have progressed even faster had it not been for the hill people, who are traditionalists — in fact, reactionaries. It's very fortunate for us that they have accepted you as a god. We will

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use that to overcome their resistance."

To what?" Dane said.

"To progress, of course, Isser Dane. What else?"

"I suggest," Dane said slowly, "that you think twice about the matter. On my world, we allowed technology to overrun the entire planet. Except, the last I heard, for a few large deserts. It wiped out all the small enclaves of disparate cultures, like a plague. Later we realized that just such diversity was invaluable to us — but by then it was too late."

"Are you a criminal?" the Panechruse said abruptly, unveiling his large eyes like an alerted cat.

"I beg your pardon? I think I may have misunderstood you."

"I think not. You imply that your people have achieved a world state. You speak against it. And you are here, on the nearest planet to your own that will support your kind of life. These facts suggest that you are at the very best an exiled dissident, or c o u n t e r - revolutionary. Which further suggests that your world is a humane state; otherwise you would have been executed, or imprisoned."

The mixture of truth, reasonable nonsense and implicit threat in this speech left Dane floundering for a moment. No reply would do, he decided finally, but the absolute truth, though he was sure it would sound equally nonsensical to his antagonist.

"We do not have a world state," he said slowly. (We have three large states, though they have grown to be very like each other in all important respects. None of the three is in the least humane. They are machines, and they treat their people like spare parts. I am indeed an exile, as you deduced — but by my own choice. In my state I was a considerable power, and was on my way to becoming even more powerful. I rejected it. It was not what I wanted, and had I stayed home, I would have been compelled to accept it."

The Panechruse leaned back upon his throne and crossed his huge arms.

"Either the psychology of your race is utterly different from ours," he said, "or you are lying. Since the psychology you imply would make the construction of a vast technology impossible — and since your ship shows that the technology in fact exists — I conclude that you are lying. That is dangerous I advise against it."

"We have no uniform 'psychology,'" Dane said. "We differ from each other, just as you do."

"No such difference could be great enough to make a Pane-

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chruse think and behave like a hill man. Builders do not destroy, nor leaders follow. Isser Dane, I advise you for the second time not to persist in this fabrication. Though we need you, we can also make your life very unpleasant. You may either be our guest — though we did not invite you here — or we will mine you to exhaustion like a natural resource. The choice is yours."

"What do you want of me?" Dane said, rather more sullenly than he had intended.

"That's better, Isser Dane. Well, then, we require technical guidance — and, in the hills, your services as a god. By the way don't consider leaving us. There is no place on Rana where you wouldn't be conspicious enough for me to find out; and as you doubtless observed as you approached our sun, Rana is the only local planet on which you could survive at all."

Abruptly, the idol-like features contorted in what might have been a smile. "Of course," the Panechruse added, "you might go back home. But I think you cannot — no matter how differently we might explain that to each other. If you can prove me wrong on this point, you need no further invitation from me to try it."

There was no arguing any of these points, that was certain. "I will do my best," Dane said, as ambiguously as he dared. "But I'm sure you also know that if I'm to help you, I'll need my ship. It contains all my tools."

"Obviously. However, we are running a telephone pipe to the ship when it is completed, I expect you to be in daily communication with me, or whatever equerry I appoint. And let me add, Isser Dane, that should you decide to help us unstintingly, the rewards will be considerable."

No, doubt, Dane thought. Just the kind of rewards I ran away from.

But he let the guards escort him out in silence.

Back on the bridge of the temple ship, he shucked off the pressure suit, went hurriedly to the toilet — a convenience his company technicians, who had not been told precisely what they were building, had neglected to install in the suit — and, the distraction relieved, resumed thinking at speed.

Of one thing, and one thing alone, he was certain: He was not going to help the Panechruse reorganize Rana into another technological hell on the Earth model. If possible, he had to impede any such attempt, or even stop it in its tracks.

But how? He could of course lift ship, set down next to the Crystal Palace, and let the Nernst

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generator blow. That would eliminate the Panechruse, the palace, the capital city and John Hillary Dane. It might also provide an abject lesson in the black side of Progress. All he needed to do was persuade the hill men — who worshipped him, after all — to bring him about 25,000 liters of water to process for reaction mass; the processing would take a week, and surely the Panechruse's steam line wouldn't reach up into these raw and distant mountains in anything under that time, no matter when it had started. It was a step the Panechruse could not possibly frustrate.

Dane rejected it almost as soon as he had begun to think about it. There had to be some strategy which would not involve the murder of several million innocent Ranidae and the fouling of the atmosphere the rest of them breathed; that first notion had been Earth thinking at its typical worst, all empiricism and no mercy. The Ranidae had decided a century ago that all killing except in direct, person-to-person self-defense was murder; was Dane to reverse that decision on his own arbitrary whim? No. For that matter, the god was not ready for self-immolation yet, either.

Well, what then? There had been the germ of another idea in there somewhere. Could he simply drag his feet? Design non-working engines? Do everything the most wasteful and expensive way? Wear out their patience?

No. The Ranidae were intelligent; they would catch him at it. And besides, they could learn. No matter how much he managed to slow up Progress, it would gain momentum eventually. At the very best, no matter how many sabots he might manage to throw into the works, he would not live forever — and to an intelligent class even teacher's fakery would provide clues.

Perhaps a Claudian policy might be the answer. The Ranidae understood steam — he was now sure he had not misinterpreted the word. They were also impressionable, and short-lived compared to men despite their burliness. It would be relatively easy to turn the whole planet into a British Midlands — an inferno of coal smoke, lung cancer, belt-transmission factories, child labor, beehive towns, — the works, even the economy, within Dane's remaining lifetime. After an object lesson like *that* —

After an object lesson like that, he realized grimly, they would charge right on. Individualistic Earthmen had drawn few morals worth noticing from the Midlands experience. The psychologically far more uniform Ranidae would go right on wor-

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shipping Progress thereafter, convinced that the theory was sound — or the religion — and that nothing had gone wrong but the practice. And, Dane now remembered, the Claudian policy had not worked even for Claudius; instead of provoking revolt and thus bringing back the Republic, it had culminated in Caligula.

Scratch that, too then.

And then he had it. The clue, the thread, was of course the hill men. They resisted the Panechruse, did they? And they worshipped John Hillary Dane, didn't they? How much better would they do against their city brethren with a god to lead them—a god who could produce an occasional battlefield miracle when one was most needed? And, on the everyday level . . . no, no gunpowder, but perhaps something like a steam cannon with rifled barrels? And, some mildly sophisticated propaganda to stir disaffection in the cities? The Ranidae ought to be suckers for atrocity stories *a la* 1914; and contrariwise, though there would be deaths, propaganda could make sure everyone on both sides knew what he was dying for. Injuries? Well, he could start with a benevolent miracle: He would give both sides the secret anesthetics . . .

What an opportunity *not* to repeat the mistakes of the past! The ideas were coming in swarms now; but after taking a few more notes, Dane pushed the new notions aside. The main problem here was not essentially technical; it was the problem of organizing and welding together the hill tribes, about which he knew very little more than that they existed and that the Panechruse hadn't been able to recruit them.

Taking the pressure suit out of its locker again, Dane prepared for an unscheduled apparition.

While he was climbing into the suit, another technicality occurred to him, willy-nilly: The hillmen did not entirely share the Esperanto of the cities. This showed particularly in their names, as he had found in his earliest conversations with the two guards; both tribesmen had had identified themselves with chains of clicks, gargles and umlauts which Dane could never learn to handle convincingly.

But that was surely only a technicality and nothing more. All messiahs re-named their converts, as a symbol of their conversion. And while he was at it, why not make the new names easy for the computer, too?

In fact, never mind names at all. He would give numbers.

The airlock opened and the One Redeemer went forth to cypher his disciples, and bring them joy. —JAMES BLISH

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BY WILLY LEY

THE ISLAND OF BRAZIL

In July 1498 Ruy Gonzalez de Puebla, the Spanish ambassador in London, wrote a routine report to his king which contained the sentence: "the English king sent five armed vessels under a Genoese (like Columbus) to find the island of Brazil and the seven-city isle; it is said that they have been provisioned for one year."

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The sentence refers to the expedition of Giovanni Cabotto — later John Cabot — to Labrador. It is also an inadvertent masterpiece of careless reporting. In the first place Cabotto was not from Genoa but was always referred to as a Venetian, though probably born in Chioggia, some distance from Venice. King Henry VII of England had issued a patent to Cabotto empowering him to use as many ships as he deemed necessary; Cabotto sailed in the *Mathew*. No specific objectives were mentioned in the king's edict; it just said that he should try "to find and to annex islands inhabited by heathens or infidels!" Henry VII had no intention of getting into trouble with the other Christian kings. Moreover, Cabotto had already returned when the diligent ambassador wrote his report; the whole voyage had lasted for only three months.

Which leaves the question of what the ambassador meant by the "island of Brazil" and the seven-city isle.

Both were invented islands, resting on an uncertain foundation of legend, hearsay and misunderstanding. For some reason the cartographers of the period from 1300 to 1500 were convinced that the Atlantic Ocean must be full of small islands. One of them asserted that "there are more than 150 islands in the sea, each larger than Ireland," while another one arrived at the figure of 357 undiscovered islands.

In reality, as any schoolboy now knows, the Atlantic Ocean is rather devoid of islands until we get to the Caribbean Sea. At the eastern end, that is near the west coast of northern Africa, there are just four islands — or rather groups of them. The southernmost, discovered in 1456 by Alvise de Cadamosto, is the group of the Cape Verde islands, to the west of the city of Dakar which, of course, did not exist then. Their location is about 15° North and 25° West. Farther to the north, and closer to the African mainland, we have the Canary Islands at about 28° North and 14 to 18° West. Then there is Madeira somewhat farther to the north and a little farther from the mainland at about 33° North and 17° West, roughly West, roughly west of Casablanca. Finally we have the Azores, about west of Lisbon, under 25° West and 37 to 38° North. They are the island group farthest out and then there is only open ocean until you reach Bermuda.

The Phoenicians knew about Madeira and the Canary Islands as early as about 900 B.C. They do not seem to have reached the Cape Verde islands; and

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the Azores, being farthest out were not discovered — half a dozen spurious stories to the contrary — until Portuguese sailors reached them in 1432. Later it turned out, however, that one Phoenician ship must have reached them, probably much against the will of its captain. The proof consists of a clay vessel, broken when found, containing a number of Phoenician coins, a few of them gold, most of them copper. However, these were coins that had been made later than 400 B.C., a time where the news of the existence of these islands should have become known in southern Europe, *if* the captain and crew of that vessel had returned.

Now, having had a quick rundown of the actual islands in the Atlantic, let us return to the fabulous islands, especially the two mentioned by the Spanish ambassador.

The story of the seven-city island is short and uncertain; the story of the "island of Brazil" is both longer and more complicated and, at any event, more interesting.

The "seven-city island" made its first appearance as an island or a peninsula of or near Morocco, and it was called *insula ad septem fratres*, the island of seven brothers. The "seven brothers" were seven actual or invented mountains. But in northern Europe the term *septem fratres* was read to mean "seven friars," and then a slow transformation began. First the seven friars were elevated in rank to be seven bishops. And then every bishop founded a city; an island that can support seven cities evidently had to be a fairly large island. So it acquired seven bays, one for each city. Some "geographers" then began to speculate whether the seven-city island might not be the large and fruitful "Island Antillia" that also was supposed to be out there in the ocean somewhere; and as time went on the two became more or less the same. I said more or less because some cartographers, who just could not have enough islands in the Atlantic, kept insisting that the seven-city island and Antilla were not the same and that Antillia was the bigger and richer one. [1])

The island of Brazil, as has already been said, has a much longer story and it was a very popular island with cartographers for a time; a patient historian has found it on no less than 26 different maps drawn during the period from 1351 to 1571. On some of these maps there are *two* islands *named Brazil, and one of them*

1) The Antilles on our maps were so named to comemmorate the existing name and it is reasonably certain that the suggestion to do so came from Christopher Columbus.

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even has three, carefully labeled *Brazilia superior, Brazilia media* and *Brazilia inferior.*

Sometimes, when one is confronted with such a problem, it helps to trace the origin of the name. Where does it appear first? And what does it mean, just considered as a word? Well, the name appears first on a map drawn in 1330 by Angelino Dalorto; it is located in the general vicinity of Ireland and bears the the inscription: *Insule de montonis sive de brazile.* This is Latin, of course, and anybody who does *not* know Latin is likely to think that this should be easy to read. It isn't. The words *de montonis* have no meaning at all; and, *brazile* is, at best, of very uncertain meaning. It was Fridtjof Nansen, the Norwegian explorer, who thought of a possibility. Nansen had, of course, read everything he could find about earlier exploration of northern waters. Much of what looked at first glance like straight reporting turned out to be legendary, and in 1911 he wrote a book about accounts he knew or suspected to be fiction. [2])

He recognized the word *brazile* to be Gaelic, originally *Hy Breasail* (also appearing as *O'Brazil,* meaning "happy island") and wondered whether the *montonis* might not be the French *mouton,* meaning sheep. The traditional "sheep islands" in the north are the Faeroe, so that the derivation from *mouton* was not at all unreasonable. Why Angelino Dalorto who was, of course, an Italian, combined the sheep islands with "brazil" he explained himself in a roundabout way, namely by stating that the wool of these sheep can be beautifully dyed.

Don't say that this statement doesn't explain anything; we'll get to that point in a little while. First we have to become acquainted with Nansen's story of O'Brazil.

On the western coast of Ireland atmospheric reflections are fairly common at certain times of the year and nobody can be blamed for thinking that a distant island has become visible temporarily. On the other hand the Irish sailors and fishermen knew that there were no important islands even a long distance off shore, so the islands had to be ghostly islands; as a kind of redeeming feature it was said that these islands were inhabited by beautiful women. More, if one succeeded in shooting an arrow to the island or in throwing a piece of iron across, this act would make the island "fast," so that one could reach

2) The original title is *Nord i taakeheimen;* the German translation, published in the same year, has the title *Nebelheim;* there is no English translation.

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it. But the few young men who did succeed never returned.

At a much later date the Irish poet Gerald Griffin (1803-1840) condensed the legend into an eight-line poem, *O'Brazil, the Island of the Blest,* that was published in London in 1843 and which reads

On the ocean that hollows the Rocks where ye dwell,
A shadowy land has appeared, as they tell,
Men thought it a region of sunshine and rest,
And they call it O'Brazil — the isle of the blest.
From year unto year, on the ocean's blue rim,
The beautiful spectre showed lovely and dim;
The golden clouds curtained the deep, where it lay,
And it looked like an Eden, away, far away.

If Angelino Dalorto had known the full story of O'Brazil he would not have made the mistake he did make. But apparently he only heard the name, and to him "brazil" was not a name, it was a word, meaning "fiery red." But he did not think of some finished article of a fiery red color; he thought of the dyestuff that went by this name and the dyestuff, in turn, was connected in his mind with islands in the Atlantic Ocean.

And that is the other half of the story, beginning in antiquity.

The ancients were fond of color in their gowns, but dyes, especially red dyes, were hard to come by. A garment dyed "Tyrian purple" was expensive, just because it had been dyed that color — incidentally the "purple" in that term is not the color we call by this name, but it means a very bright red. One source was a marine snail of the Mediterranean region, called *Purpura haemostoma* by zoologists. The snail produced a fine dye, but only one small drop per snail, hence the high price.

Only a few decades before Christ, the energetic and highly learned King Juba II of Mauritania started what can only be called dye-works on the Canary Islands. He reported that his men found the islands uninhabited but that in places there were ruins of old buildings; a statement that goes well with the assumption of Phoenician settlements on those islands several centuries earlier. The dye factories of King Juba became proverbial that Pling the Elder referred to the Canaries by the name of Purpurariae, the purple islands.

Pliny did not say, or did not know what the dyers of King Juba used in their places in the Canaries; and a book on animals and plants, written by Juba himself, has unfortunately not been preserved.

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But thirteen hundred years later it was no longer the secret that it might have been at the time of Pliny. Both on the Canary Islands and on the not-yet-discovered Azores there grows a lichen which furnishes a fine red dye. Its botanical name is *Roccella tinctoria;* it is generally known under its French name of *orseille* and it was called the Herb Orisello by Alvise de Cadamosto.

To all Europeans who were at all interested in things of Nature, the presence of large quantities of orseille on most of these islands created the impression that Atlantic islands and dyes belonged together. In the meantime, however, another red dye had been found on the European mainland itself. It is mentioned in a document for the first time in 1194 when the two cities of Bologna and Ferrara made a treaty which regulated, among other things, their commerce in *grana de brasile,* a term that, in this connection, is best translated as "fireberries." Of course they were not berries, they were the galls that form on the leaves of the oak *Quercus coccifera,* caused by the infection with an insect parasite that has received the fitting name of *Coccus infectorius.*

This was the "brazile," the red dye, that Dalorto had in mind when he labeled an island on his map with the misleading description that mixed up sheep and brazil dye. While others did not mix sheep and dye, they did mix islands and dye. The mysterious Island of Brazil, if anybody succeeded in discovering it, would be easy to recognize, for it would surely be the home of plentiful quantities of Cadamosto's Herb Orisello.

When the Azores were discovered, and at the foot of the mountain, that was the characteristic of one of the islands, *orseille* was found to grow in quantity. The mountain was quickly christened Morro do Brazil, while the island received the name of Terceira. Carless historians later made the mistake by saying that there can be no doubt about the identity of the Island of Brazil and the actual island Terceira. You can find this statement even now in a well reputed large encyclopedia. The assertion is nonsense for the very simple reason that the Irish O'Brazil was not an actual island and therefore could not refer to the unknown Azores. Moreover, O'Brazil was "seen" to the west of Ireland and the Azores are to the west of Portugal.

The whole confusion is due to the single fact that the Gaelic word happened to sound like the Old Italian word for a certain color.

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But if this is so, how about the name Brazil on our maps?

It actually is named after another red dye.

The Portuguese who discovered it first called the area Terra de Vera Cruz; it was around the year 1510 that the name began to change to Terra de Brazil, for soon after its discovery it turned out that enormous numbers of "dye-wood trees" happened to grow there. Botanically these trees belonged to the genus Caesalpinia, other species of which can be found elsewhere on earth in a sufficiently warm climate.

How important this discovery was to the Europeans of the early sixteenth century can be deduced from a financial transaction that took place in 1500. A very enterprising Italian merchant by the name of Fernando della Rogna who, we don't know how, had investigated and appraised the situation, made an agreement with the king of Portugal. Fernando della Rogna acquired a monoply on the dyewood trees of Terra de Vera Cruz in consideration of an annual payment of 4000 pieces of gold to the Royal Treasury. Apparently the agreement worked out well; at any event a small island off the coast of Brazil, discovered either by della Rogna or by one of his captains, was named Fernando Noronha, the Portuguese version of his name. It bears this name to this day.

The fact that Brazil, 'our' Brazil, still appeared as a large island on maps of the sixteenth century has nothing to do with the O'Brazil-red-dye confusion. The American double continent was discovered piecemeal and the fact that there was a continuous coastline from Labrador to Brazil was simply not known. Hence Labrador, Florida and Brazil first appeared as large islands on the maps; there was no indication yet that they were portions of the same continent.

In fact, since the original goal of the explorers had been to reach China, most captains and their sponsors rather preferred the idea that all these newly discovered lands were large islands, useful in themselves but with passages to China between them.

Martin Schongauer's Dragontree

Dyes, as the story of the island of Brazil has shown, were something that pre-occupied the commercial instincts of both the ancients and the people of the Middle Ages.

There was one more source for a red dye, one that has not yet been mentioned. It was "dragon's blood," a dramatically named substance that was the gum of a

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tree called the dragontree. Dragon's blood, the nature of which was perfectly well known, came mainly from the 'island of Dioscorides', the island of Sokotra near the mouth of the Gulf of Aden, situated under 12° North and 54° East. A closely related species grows along the Somali coast of the African mainland and still another species grows in places along the African west coast. The dragontree, like the equally weird-looking Joshua tree of our western deserts, belongs to the Lilly family, which, of course, was not known then.

The red gum, from 1500 to about 1800, was often prescribed as a remedy for toothaches, presumably following the motto: when desperate, try anything! It also served, and much better, as a source for a red dye, though the dye was not as good as that from orseille.

When the Portuguese rediscovered the Canary islands and Madeira, they saw that the dragontree grew on these islands, too. In about 1455 Alvise de Cadamosto carefully described a dragontree he had found on the small island of Porto Santo near Madeira. More than a hundred years later the dragontree was described for the first time in a botanical work the "Spanish Herbarium" of Carolus Clusius, published in Antwerp in 1576. Clusius had seen a dragontree himself in 1564, growing near the wall of a monastery in Lisbon, but said that Cadamosto should be considered the discoverer of that tree. Carolus Linnaeus later named it *Dracaena draco*.

There is a somewhat earlier reference to dragontrees growing near Lisbon — they had evidently been transplanted either from the Canaries or from Madeira — by Dr. Hieronymus Muenzer. He saw three specimens in 1494 and said that one of them was large; the other two, it might be presumed, were still small.

There is an intriguing mystery about the dragontree: it was carefully and correctly drawn about thirty years *before* Dr. Muenzer saw it by an artist who, according to all existing historical sources, could not possibly have seen one. The artist's name was Martin Schongauer. His father, a goldsmith, had been a native of the city of Augsburg in Germany, but at one time in his life had decided to move eastward in the wake of the Teutonic Knights and had settled in the small city of Kolmar, in what later came to be called West Prussia.(Kolmar is now just inside the Polish border.) The artist was born in Kolmar in about 1450 and, as the available sources say, lived there all his life, except for short journeys to nearby towns.

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Around the year 1470, when he was still a young man, he composed his "Flight to Egypt," based on the well known Biblical story. It shows Joseph and Mary with the infant Jesus in an oasis; Joseph is gathering fruit, assisted by the angel. The largest tree in the picture, placed conspicuously in the foreground, shows a dragontree. It is so well drawn that botanists could say that the tree was about 50 years old.

How could Schongauer have done this? There are no earlier pictures of that tree and for a long time Schongauer's was the only one, as is proved by two imitations. Albrecht Duerer's "Flight to Egypt" — around 1515 — is frankly based on Schongauer's picture, though parts of the tree are concealed by clouds. The other imitation is a painting, known to have been done in 1518 in Augsburg by one H. Burgkmair. Burkgmair called his painting "St. John on Patmos" and it is a rather fantastic picture; but Schongauer's dragontree is there, not as good as the original, but still recognizable.

It is unfortunate that Dr. Muenzer did not give the size of the "large" tree he saw in 1494, because, when it comes to dragontrees, the word large is a flexible term. The trees grow to a very old age — one that died in 1868 on Tenerife was believed by the local inhabitants to have been 5000 years old, though botanists would not grant more than 3000 years — and it seems to grow for as long as it lives. If Dr. Muenzer, as can be assumed, compared the tree he saw to trees in fruit orchards, a 75-year-old dragontree would look large. The same tree would then have been about 50 years old by the time Schongauer drew it.

But Schongauer is supposed to have stayed in the area of Kolmar all his life. This assertion can be accepted if it refers to his adult life. As a young man he must have traveled and in his travels he must have reached Lisbon, the only place on the European mainland where one could see a living dragontree.

—WILLY LEY

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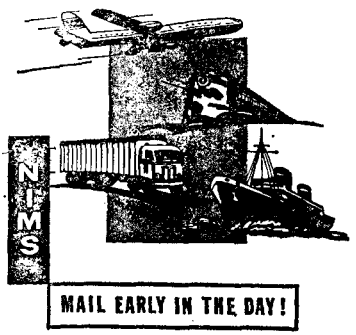

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Kendy's World

by HAYDEN HOWARD

Illustrated by REESE

The world was too complicated for people to understand. So they had the National Emergency and insane space maneuvering — and Mr. Smith.

I

At first Kendy guessed the Russians were as paranoid as Americans. Their armor of systematized delusions as to the nature of the universe had been penetrated by something. So they were up tight.

Their *Lotka* II had attached herself to Phobos as planned, but her landing module never did spiral down to the fascinating surface of Mars. Although E. Va-

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vilov was a biochemist, all three silvery modules of *Lotka* remained clinging together and to that lifeless moonlet. Whenever Phobos whirled from behind Mars, coded lasergrams flickered.

After official secrecy so dense it seemed to be shielding ideological confusion, Moscow announced there had been a minor technical difficulty. *Lotka* returned all three men to Earth. But there was no interview with E. Vavilov.

Kendy was young enough to be momentarily interested, but at sixteen his personal universe was small. He couldn't feel that something so distant would have anything to do with him. He wanted to be a basketball coach. Sometimes he wanted to be a biochemist. Occasionally he thought he wanted to become a statesman. He felt fragmented. His friends smoked grass. He felt saddled by contradictions. He smiled at his teachers because he wanted to like them. His thoughts galloped awkwardly, shying away from the big cliffs of life. He wanted to wave his arms but kept his hands in his pockets and talked like a slob. He and his friends were growing up during the anti-intellectualism which grew with the National Emergency.

Kendy had been born into the usual world of paranoids. In the delivery room of the hospital, his gasping young mother hoped he'd become the groovy swinger his father wasn't. His pale father more conveniently had hoped this smiling little ape-face would become President of the United States.

His father didn't live that long. His skull was shattered by a stray bullet the day the National Emergency was declared. Kendy had been seven then, but all he could remember now was smoke spreading from downtown Los Angeles. He couldn't remember crying. Although he had been seven when his father was alive, he couldn't remember his father's voice. He knew his father had been a case-worker for the Welfare Department, because his mother told him so. He couldn't remember the feeling of his father's hand on his shoulder. Clutching the photo album, he would stare at his father's two-dimensional face. Under the magnifying glass, his father's face within the glossy photographs disintegrated into blotches and specks. It was as if his father were hiding from him.

Or he was hiding from his father. As if he were too small to accept the burden, he didn't want to understand who or what had killed his father, whose innocent and unobtrusive name had been Olson. The Los Angeles Telephone Directories contained the

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names of thousands of living fathers named Olson. His mother explained, but he couldn't understand why his father was the one to die. "He was very sentimental and idealistic," she rambled. "I guess I was sort of — what they called — a hippy. When we brought you home from the hospital, I started calling you *Ken* for short. Your father sort of laughed and said: 'Sounds too much like those damn Ken and Barbie dolls. His first name is Ken-ne-dy. We named him Kennedy. We'll call him Kennedy. He will be proud of it!' "

In kindergarten, other kids couldn't pronounce it. They slurred it. Kendy could remember all the way back to kindergarten, though he couldn't remember his father. Joyfully he had led the other children up and down on the chairs until the teacher argued that it was rest time. Sprawled on his rest-mat, he should have kept his eyes shut, but he tried to read the *Los Angeles Times*. He was matching the letters M.O.L. with its picture when the teacher's weak voice shifted from reprimand to sing-song ridicule. To his surprise, all the other children began to sing with her: "Kendy reads a noisy newspaper, Kendy reads a noisy newspaper."

Hastily he'd folded the terribly loud newspaper. He'd closed his eyes. At that moment Kendy learned fear that no one would like him any more. Soon he learned to get a Gold Star for cooperation in school.

By the time Kendy was sixteen, the National Emergency had been in effect for nine years, and he barely noticed it because he'd grown up within it. As a gangling six-footer with floppy brownish hair, he stood in contrast to his plump mother whose hair was raven-black. He did inherit her prominent cheekbones, so that he seemed to be squinting out at the world. He smiled so much, in contrast to the cool expressions of his classmates, that they'd always been attracted to him.

The year before he'd been elected sophomore class president. Now he was the hard-working member of the student council. He was the hustler on the junior varsity basketball team, bounding downcourt like a grasshopper.

He couldn't help laughing whenever he realized his life was a put-on. By letting his grades slump and becoming more popular with the kids than with the teachers, he managed to become one of the nominees for next year's student body presidency. He surprised everyone by presenting a political platform as if it were a real election concerned with real power. His number one

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plank was yearly grading of the teachers by their students. This hopefully constructive criticism would have to be conducted and tabulated off-campus. He began to worry that he might be elected.

When he took a moment to glance at the television news, Soviet space efforts had been redirected to Earth's garbage-strewn Moon. In a startling retreat from their Phobos-Mars cop-out, they were conducting a massive re-exploration of the Moon. Soviet crawlers searched its maria and craters so intensively they seemed insane. They even uprooted the old U.S. base. Nothing on the Moon could be worth as much as the search was costing.

Concurrently, in West Virginia, Tin Woodman was dynamited by persons unknown. Kendy had read that Tin Woodman, growing tall beside Ozma II, was considered a menace by paranoids of various political persuasions. They were afraid that Something Out There might hear Tin Woodman's radio shouts to the universe.

Kendy felt both relieved and angered when notified he'd just lost the school election — by three stinking votes. Loping down the long concrete steps from the campus, he wished he could escape from high school. Ahead of him for next September, his senior year now crystal-balled as a drag. He doubted he could make the varsity basketball team. He might try to be elected president of the Biochem Club, and he'd have to resuscitate his grades before the college recruiters returned.

Squinting against the June sunlight, he smiled, and the anomaly of his fair skin and high Asian cheekbones might have made an ethnologist shrug or jokingly classify him as *Siberisk,* a Soviet citizen from the Siberian racial melting pot.

He was in the world pot. His future was so immensely appalling, like the future of any boy then growing into manhood, that its recapitulation involved a series of amputations in order to examine the vital sequences of his life.

"How'd the election come out?" Mr. Smith was such a jovial giant standing outside the high school's chain-link fence that he resembled a college basketball coach on a recruiting expedition.

"Down the tubes," Kendy retorted, not afraid to sound a little disrespectful; Mr. Smith had been taking him to lunch all week until today.

"I'll wear a black armband," Mr. Smith laughed unexpectedly, and he glanced down at his brown shoes, which were peculiarly

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small and short for such a huge man. "Seriously, I heard you lost by only three votes."

"Then why'd you ask me how it came out?" Kendy blurted. "The count hasn't even been announced yet except to me and Steve."

"I was anxious." Mr. Smith grinned, tautening his incipient jowls, until he appeared to be a well-conditioned forty-five.

"For me to lose?" Kendy knew why that was true.

"Ken - Kendy, I've been trying too hard to impress you." His smile became so uncertain he could have passed for a dissipated thirty-five. Then he became so enthusiastic it seemed as if a slimmer man of twenty-five were peeking out. "Since you've lost, since you're cutting afternoon classes anyway, fly up with me past San Luis Obispo right now for a grand tour. Why wait till next year?"

Kendy laughed, trying not to seem embarrassed. "You guys — recruiting kids before they even finish eleventh grade — "

It didn't seem ethical. Kendy had taken the Scholastic Aptitude Tests simply as practice for next year when he would take them again as a senior. To his surprise, nineteen Universities had contacted him prematurely. Academic recruiters slipped him glossy promotional booklets and advised him to stay clean until next year when he was a senior and could sign a Letter of Intent.

The reason good students were being more actively recruited than athletes was Senate Bill 30-06, passed the year the National Emergency began. It offered double tuition subsidies to any approved university for each student it recruited whose S.A.T. scores were at least 500 in English and above 650 in Math. The Senators had added other requirements. Approved recruits must be patriotic high school graduates.

"I won't have enough units to get my high school diploma until *next* June," Kendy said.

"That makes us a better choice than Harvard," Mr. Smith laughed. "We want you now."

Kendy had heard that this new National University north of San Luis Obispo wasn't dependent on the emergency education legislation. It had its own unlimited government funding. It could set its own entrance criteria.

"I've lost the election," Kendy said. "Why do you — do you still want me?" He didn't know if he wanted National University. The U.C.L.A. recruiter had knocked N.U. even worse than U.S.C. His high school counsellor had warned him that enrolling at National University was like

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making a deal with the devil but then weakened his argument by pushing his own alma mater,, Fresno State. The National Television Station commentators all said National University had outstanding educational innovations.

Mr. Smith rested his gray-gloved hand on Kendy's shoulder. "Some fancy universities really try to collect nothing but high school student-body presidents. But I kid you not, we just want guys we like."

Corn-ball, Kendy thought, but surprised himself by smiling with pleasure, liking Mr. Smith better and better.

The gray glove pressing on Kendy's shoulder had seemed smooth but its weight began to transmit a bumpy feeling, Kendy thought, as if Mr. Smith's fingers were nothing but bones. Yesterday, when Mr. Smith took him to lunch, Kendy had felt uncomfortable watching Mr. Smith munching a cheeseburger while wearing gloves. But Mr. Smith wore such a groovy next-year's sport coat with a long Edwardian tail that Kendy knew he must be a smooth operator, in spite of forgetting to remove his gloves when he ate.

"Say the word, Kendy, and we will take a taxi to the jet pad."

"Sir, I've got to be honest with you." Kendy blurted. "You'd better recruit some senior. My mother would never sign the waiver to let me skip my last year of high school. She hates — "

"She'll fly up with us."

"You're kidding." Kendy knew his mother would refuse to visit that campus; last night she'd put another underground magazine on his pillow, and it roasted National University even worse than West Point.

"This noon I took her to lunch at the Hilton," Mr. Smith explained.

"Are you putting me on?"

"Say the word, and I'll hustle back to the May Company and fix it with her supervisor so she can take the rest of the afternoon off and we'll go." Mr. Smith was talking as excitedly as if he were twenty-five again. "What department is she in?"

"Complaint Department."

Kendy thought Mr. Smith was over-confident. He couldn't understand Mr. Smith. He could understand the surface of his words. Mr. Smith talked as bluntly as a fellow slob. Sometimes Mr. Smith would switch, mouthing long and well-organized sentences. Probably these were part of the recruiting spiel he'd rehearsed. They didn't necessarily indicate intelligence. But at other times, while kidding around, Mr.

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Smith had wised-off so shrewdly that Kendy thought this huge man might be able to speak from a great depth of experience and emotion if the surface of his life hadn't confined him to being a slob.

It was as if the man were fragmented within his shell. When he smiled, he seemed youthful. When he looked away in a moment of disinterest, his face sagged and he seemed old, as if staring at death. Suddenly he'd grin at Kendy and become young again. When he laughed, he gave Kendy a feeling of warmth and reflected strength.

But then Mr. Smith would say something slobby, and Kendy could feel the uncertainty, as if he were recruiting in a world he couldn't quite believe. Kendy wasn't repelled by this. He felt the same way — fragmented.

At home his mother talked like a slob but occasionally astonished him with her bitter wit. She seemed to be the only person who remembered what life was like before the National Emergency. At school, his friends, were slobs, half-heartedly rebelling as if they didn't know which way to go. Kendy's counsellor occasionally would pause while berating him for not trying harder scholastically and switch to praise. During those glowing moments of hope, even though Kendy knew the counsellor was shoveling child psychology on him like manure, Kendy could feel himself growing. His fragments were coalescing. It was possible for him to become clear-thinking, subtle, strong and purposeful. In those moments he knew his father couldn't have been a slob.

II

At 2:32 the copter howled upward through the smog with Mr. Smith sitting next to Kendy's mother and shouting: "National University's a whole new concept in American education."

His mother's wide face seemed flushed with excitement In the roaring draft from the ventilator, her crow-black hair lashed her cheekbone. Kendy wondered if Mr. Smith had researched their background so thoroughly that he knew she was one-quarter Mescalero Apache and that after only one semester at U.C.L.A. she'd married a skinny blond-bearded Minneswedish sociology student and given birth to Kendy.

"Only three of us in this big helicopter?" she shouted.

Mr. Smith had issued them tight head-sets, but she shouted as if she didn't believe her cordless intercom was working: "Only three?"

"Holds fourteen," Mr. Smith answered proudly. "This is the

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newest Cheyennette," he continued innocently "Fourteen seats in our passenger capsule. Comfortable?"

Kendy winced. He knew what was coming. She had a caustic tongue.

"I thought this so-called Coalition Congress," she shouted, "was hanging on for nine years or ninety-nine — to save money! A dollar saved means a policeman's paid. Let the poor pay for the war. I thought one of the reasons for continuing the National Emergency was economy in government transportation."

To this sarcastic shaft, Mr. Smith merely explained, "The copter had to go back to National University anyway."

Kendy looked away. If his mother kept making subversive remarks against the Coalition Congress, he thought he might not be admitted to any university which was receiving a government subsidy, as they all were.

"The diplomats of the future," Mr. Smith said hopefully, "will have got their starts at National University."

"Kendy's had a nice offer from Harvard," she shouted, "for next year — when he's ready."

Embarrassed, Kendy peered out of his greasy window. He watched the stub-winged shadow of their copter slide across Santa Monica Bay and shrink as the Cheyennette rose. With its rotor blades clattering, the winged copter leveled off and began to accelerate like an airplane. Kendy supposed its rotor was free-wheeling now. Its tail-propellor was pushing them so fast that the stubby wings were surfboarding on the air.

Below, along the long curve of Malibu Beach, the surf wrinkled and whitened. On the other side, past Mr. Smith's head, Kendy glimpsed the distant purple hulk of Catalina Island. Mr. Smith winked at him. Kendy hoped they were still friends. The winged copter buffeted northward above the Santa Barbara Channel, and the oil drilling platforms made Kendy think of spiders standing in the greenish summer water. The Cheyennette whined like a mosquito with its course paralleling the islands of the National Park. Those protruded like jagged windbreaks, already summer-brown. The northernmost island glared white with engulfing sand, and Kendy noticed the rows of black spots there on San Miguel Island, probably barracks of the old Emergency Dentention Camp. When his mother didn't seem to notice them, he relaxed. She was quieter than he'd expected.

The Cheyennette was swaying like a boat. Ahead, the greenish

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water of the Channel was streaked by an arctic blue current. Wind from the north stretched out the whitecaps. Kendy knew the dark outcurve of the mainland must be Point Concepcion where the marine ecology became North Pacific. Surf bearded the cliffs of Point Arguello. Up on the brown hills, rows of excavations into the underlying chalk reminded Kendy of more whitecaps. In their white arches he saw radar dishes and unrecognizable apparatus. They would be aimed during M.O.L. launches. With manned synchronous satellites hovering over a lot of places besides Moscow and Washington, he guessed the jokes about what girls did when they bathed in the nude might be true.

"We're almost there," Mr. Smith's voice announced, and Kendy guessed this premature statement was supposed to keep them from becoming restless; they hadn't even passed Vandenberg Air Force Base yet.

Over the dry mouth of the Santa Ynez River, Kendy watched a long freight train flowing across the bridge. The train wormed north past pencil-sized Minute Man VII's standing at attention for testing. Kendy saw the shadow of a missile so enormous he wondered if it would be another attempt.

" — of us," Mr. Smith was saying in their earphones. "Not because their intelligence operations were any better than ours. The real reason is that way back before the Emergency our space appropriations were too small."

"When I was a girl, we always blamed the spies," her voice replied dryly as the freight train crawled past a concrete blockhouse.

"That was atoms, not rockets," Kendy blurted in embarrassment at her stupidity.

Looking down, he remembered viewing an old tape in American History about the days when trains still carried passengers. Along this same track, the Southern Pacific Daylight had rushed a Premier Krush-off-or-shev-or-something toward San Francisco. While that old passenger train hurried through Vandenberg Air Force Base, porters had scurried to pull down the blinds in his car.

"For some reason they're crawling all over the Moon again," Mr. Smith was saying.

"Why worry about them when it's us we should be worrying about?" she protested as if trying to impress some great lesson on Kendy.

But Kendy remembered how intensely she'd watched the Telstar broadcast the day the Russians sent those three men almost to Mars. They'd seemed so

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confident. That grinning biochemist named E. Vavilov had recited what he expected to find on Mars. On the television screen, he had seemed surprisingly young for a Nobel Prize winner. His high cheekbones made him appear somewhat Siberian.

"He looks like someone I know," Kendy's mother had muttered.

E. Vavilov had smiled so mischievously while proclaiming dialectical materialism as the scientific doorway to total understanding of life throughout the universe that Kendy wondered if — really — Vavilov wanted to wink at all his friendly-enemy biochemists out there in worldwide television land. Then he had winked! Or gotten something in his eye. Kendy had leaned forward, blinking.

After the abortive return from Phobos, E. Vavilov didn't appear on television again. The pilot of *Lotka* II recited their excuse from the teleprompter — a minor technical difficulty. A month later, while maintaining his skills or his flight pay, that pilot reportedly crashed his jet trainer. *Pravda* also announced that E. Vavilov had returned to his research at the Limonological Institute on Lake Baikal, where he was temporarily indisposed. Mars wasn't mentioned.

The Soviets began their inexplicable search of the rough surface of the Earth's Moon. This seemed an advance to the rear.

The Cheyennette skimmed above the sand dunes of Pismo Beach. It banked oceanward around the dark cliffs which protected Port Avila from the north wind. Out over the Pacific, around this immense promontory, the copter climbed. Kendy knew they must be approaching National University. He smiled nervously as he searched for it. Mr. Smith had mentioned that it was located in a canyon. This mountainous promontory was gashed by dozens of steep canyons down to the breakers. But there was no sign of it.

"There's Diablo Canyon, Pacific Gas and Electric's nuc-electric generating plant," Mr. Smith said. "National U's so close our light bulbs stay lit by induction." He smiled faintly at the tired joke.

Kendy peered at gray-green chapparal slopes and afternoon-shadowed canyons on this ten-mile-wide bulge into the Pacific.

"Beyond the University, in the next bay," Mr. Smith said enthusiastically to Kendy's mother, "there's Moro Rock. Our boys have fun assaulting — I mean, climbing the Rock. Of course the Park Service has installed safety fences all the way to the top, so

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it's safe enough. Look farther north beyond Moro Bay. We could see San Simeon if it was a clearer day."

"Oh, the Hearst Castle," Kendy's mother said. "At least the people got something back from him when he died. Personally I — "

"Yes, it's an historic monument," the recruiter interrupted, "with llamas on the lawns. Look back the other way, inland. There is San Luis Obispo — nice little town of fifty thousand — and you can see the buildings of Cal Poly. Those unimaginative engineers are supposed to become our traditional rivals. They win the football games, but there's no competition intellectually. In educational methods and in architecture, National University stands alone as the model for the future of American higher education," he recited. "It is designed as an answer to the National Emergency, and congress has continued to be generous. We're enlarging again this year."

Visually, Kendy had been searching unsuccessfully, for a canyon. Instead, he saw a vast shallow bowl-shaped pasture at the head of what must have been a canyon before the earth-moving machines began their work. Its bulldozed rim shimmered golden brown with wild oats. Its center was lawn-green. Then he spotted a circle of red tile roofs arranged around a central hub of huge roofs. Kendy blinked in surprise. Although it was 3:30 in the afternoon, the buildings cast oddly short shadows.

The circling Cheyennette jerked as its rotor re-engaged. While it descended, Kendy counted twenty tile-roofed buildings around the rim of the campus and nine more dorms under construction. Even the huge lab buildings and auditoriums at the hub were only one story high, which explained their short shadows.

From each dorm building, a red tile path extended inward like a spoke to the hub buildings. Kendy couldn't see any students. He kept looking for students on the circular path which connected the dorms as the copter settled down to a landing behind a dorm.

Beneath the tile roof and shaded porches of what was supposed to be a dorm, there was a glint of office windows. The lobby and administrative offices seemed to occupy the entire building. Mystified, Kendy began to wonder whether everyone here was an administrator?

As they walked in past Spanish ironwork and dented armor, Kendy's mother said: "Where will he sleep? Not even room for a hundred students."

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Kendy had told her each dorm was supposed to house eight hundred, or so the catalogue had said.

Mr. Smith laughed as if appreciating a bit of humor from her. "We had the dual problem of conforming to historic California architecture and also to our country's needs."

He led them to the row of elevator doors, all inscribed: DOWN.

At the minus-one level, they walked out of the elevator into what resembled a miniature railroad station. An electric car hummed in from the central hub. Men scrambled off. None had beards or long hair, and surprisingly few carried books.

Another car zipped through on a cross track which formed a right angle with the first. Kenby straightened. The car left a whiff of perfume.

"Well, that's something!" Kendy's mother said enigmatically. "When I was at U.C.L.A. we had to hike miles between classes, always hurrying and always late. Is this a coeducational dorm?"

"Just passing through," Mr. Smith answered quickly. "Their car is on the rim track. They're just passing through to their own dorm. No girls allowed below this level."

"That seems — stupid," she remarked. "For a supposedly modern — "

"National University was authorized by Congress to rebuild moral standards," Mr. Smith hastily answered with a straight face. "N.U.'s goal is to help renovate the traditional way of life which made America great." He grinned at Kendy. "There are some cute girls here."

But Kendy knew from the catalogue that there were only two women's dorms, though he hadn't given the implications of that scarcity sufficient thought.

" — group solidarity within each dorm," Mr. Smith was reciting, "and friendly supervision like an enlightened academy so that the student unrest, which was so prevalent in older universities before the Emergency, can't happen here."

"Uh-huh," Kendy's mother said, in obvious disbelief.

"Over here," Mr. Smith said hastily, "is our recreation hall."

The clicking ping-pong ball on the automatic-return table stopped. At the open end of the table, concealed nearly to the armpits, a startlingly young boy stared across the dark green plywood at Kendy. As if in disbelief or pain, the boy's sharp features screwed up, and he swallowed with an audible gulp.

Kendy squinted in recognition and opened his mouth to speak.

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But Oliver abruptly turned his back. Kendy didn't know what to say. He heard another gulp, even though Oliver's back was turned and he was walking away from Kendy. Like a goddamn Gollum, Kendy thought, as Oliver hurried away with his big white tennis shoes flapping on the hardwood floor. When Oliver reached the dark doorway, his pale face looked back, glaring.

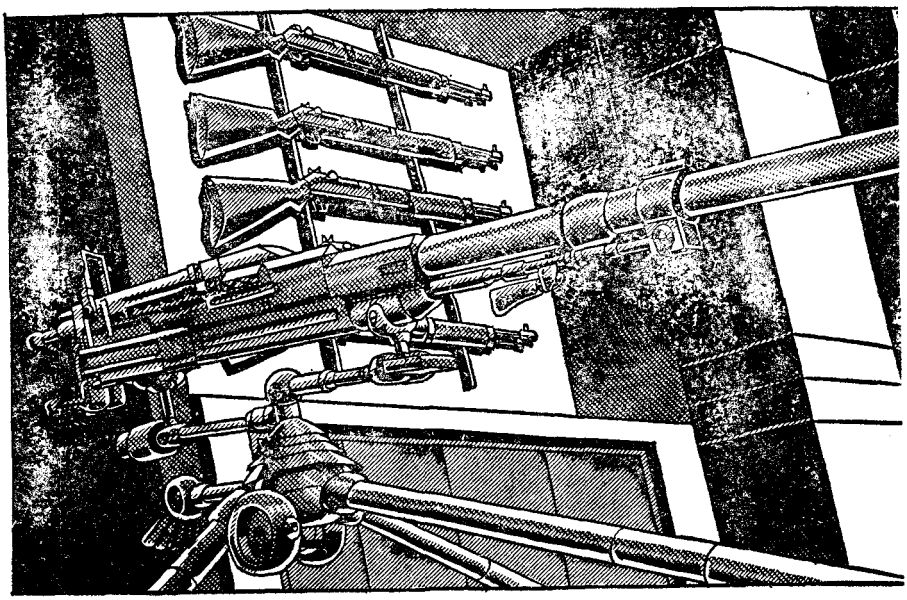
Why? Kendy was sure he was the one who should be carrying the grudge.

Sweating, Kendy tried to feel angry. It wasn't rational to be afraid of a kid that small. He doubted if Oliver was fourteen yet. But Oliver evidently was already enrolled here and would have the advantage of being in a higher grade. Kendy reassured himself that National University wasn't like West Point with hazing of the plebes and all that guff. Anyway, he was only visiting National University. He was not committed to enroll here.

But if he turned chicken, Kendy thought, and didn't sign up at National U. just because Oliver was here, he'd be both timid and stupid. Oliver was only a little -- well, what was he?

III

Mr. Smith was steering Kendy's mother along the hall,



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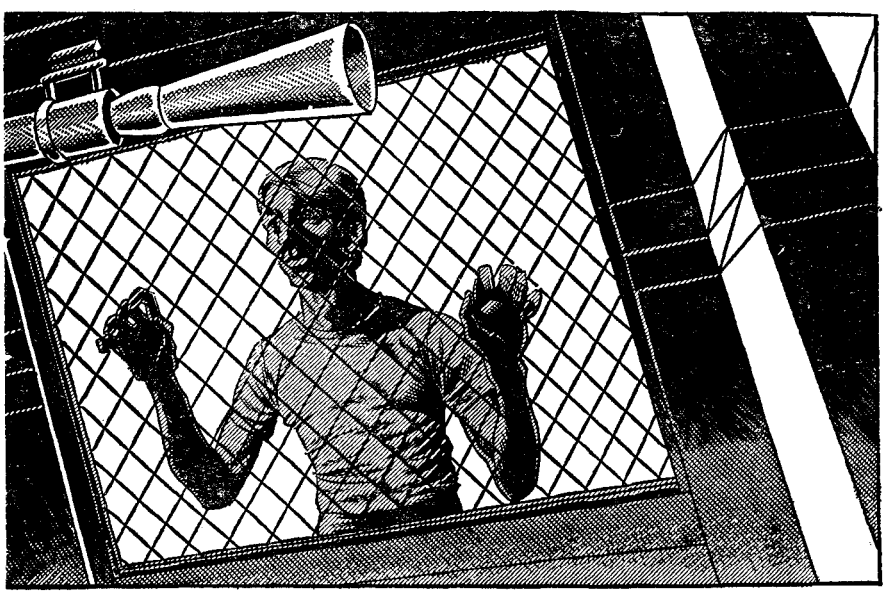
away from the entrance to a dim room barred by a steel grillwork which was a sliding door. Kendy peered through the locked grill into the eye-widening semi-darkness at the dim shapes of rifles hanging on the walls. His eyebrows rose as he recognized the awkward silhouette of an ancient Chicomm AK-47 with its forward curving magazine. The other guns were new to him. His heart thudded with sudden excitement. Rows of glass cases glinted in there, but he couldn't see what they contained. From one of the rifles on the wall hung wires and a battery. He had to admit to himself he was itching to handle all those guns. He hurried away as if he needed to escape from something.

The coffeeteria reeked with the odor of cheese burning. A tall man wearing a really sharp sport coat was trying to scrape a smoking cheese sandwich out of the infrared dispenser. Kendy guessed he must be another recruiter because a mother, father, and son were seated at one of the round tables with four coffee cups but only two cheese sandwiches in front of them, and they were looking around uncomfortably.

To his surprise, Kendy's mother was smiling. Mr. Smith had brought her a lunch of everything she liked best. As Kendy moved



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to join them, Mr. Smith removed his arm from behind her chair and interrupted their conversation to point to the gleaming row of snack dispensers. "You don't need coins, just help yourself."

Feeling like a fifth wheel, Kendy went and stood in front of the infrared dispenser. He pushed the buttons, trying to force it to grill him a cheese sandwich. It hummed. Oliver's image loomed in his memory as if the kid were a monster Gollum instead of —

Two summers ago, Oliver would have been only twelve. Kendy had been a Junior Counsellor at that damned camp for Gifted Children. The second morning, Kendy had tried to conduct his first inspection in his tribe's tent. Oliver slouched beside his messy cot, gulping air and contemptuously belching. Although Kendy didn't bother to make his own bed at home, he had tried to enforce the rules here in the camp, and he suggested to Oliver that they reason together. The sheet must be folded over and the corners of the blanket must be square. Oliver blurted a four-letter word. Kendy applied a hammerlock. Oliver screamed like a girl, startling Kendy so much he let go.

Oliver complained to the Senior Counsellor, and this grizzled college student took Kendy aside. "The kid's father is some sort of space scientist whose wife is a Senator's daughter, so don't let him get away with anything. Your job is to enforce the rules, the same for everybody. Just don't leave any marks on his body, so the Director will know you haven't used force."

Each morning, Kendy had harrassed Oliver until he made his cot. Scowling, Oliver would run outside and harrass a fat kid, who didn't know how to defend himself. Oliver was master of the sly kick and the innocent denial. When Kendy tried to mobilize opinion in the tent against Oliver's bullying, the other little kids seemed unconcerned. When Oliver deliberately stood up in the war canoe, Kendy fined him a week's desserts. In the mess hall, Oliver refused to eat anything, and a rumor spread that the food was poisoned. When they were alone together, Kendy offered to shake hands and start over.

Convulsively gulping, Oliver spat on Kendy's outstretched hand. Almost bursting with rage, Kendy wiped his hand on Oliver's face. Oliver clamped his teeth on Kendy's finger. Kneeing Oliver, Kendy writhed free. Not wanting to escalate, Kendy attempted an orderly withdrawal, but Oliver followed with sharp

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kicks and ineffectual karate chops. "You stinking bully, I'll veetcong you."

While defending himself, Kendy hurled the kid against a tent pole, mashing his nose. Snorting blood and crying, Oliver opened his Boy Scout Knife. "I'll drive you out of here if it takes a hundred years."

With a thrill of fear, Kendy grabbed his wrist and took the knife away. He didn't report the incident because Oliver would have been expelled. He didn't report anything.

The next morning Kendy was fired for leaving a mark on a camper. With his nose swathed in tape, Oliver came up behind him while he was packing. Oliver's eyes were magnified by tears. "You big bastard, I'll get you if it's the last thing I ever do."

By the time the infrared dispenser disgorged Kendy's bubbling cheese sandwich, his mother was digging into chocolate pie heaped with whipped cream, and Mr. Smith was grinning like a shrewd farm boy who puts out salt for the cow in order to catch the calf.

"Kendy will have an opportunity to travel in foreign countries," he elaborated. "All over the world — "

Kendy's mother dropped her fork. "I thought you said he'd be protected from the draft."

"He will. This would be as an exchange student."

"As a State Department Cadet," Kendy muttered through the molten cheese sandwich, embarrassed as usual by his mother's abysmal ignorance.

"That's one possibility," Mr. Smith tried to agree, and his gloved hand reached for the sugar. "There are other — opportunities — in civilian government with more future for a young man than the State Department." He was smiling at Kendy's mother. "We know that big organizations grow bigger, and the biggest is our government. Who can foresee all the opportunities for a young man to grow?"

"The pie was very good," she said, looking around and frowning.

"During his first two years at National University, he'll enjoy the broad general education," Mr. Smith said as he rose to bring her a dish of chilled melon balls. "We're rebuilding a reawakened citizenry with a renewed understanding of our national purpose."

Kendy wondered at the words as Mr. Smith looked straight at him.

"We're building opportunities for those few young men who have the intelligence and courage to shape our future."

Corn-ball, Kendy thought, but

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someone would have to lead, and Oliver's sharp face loomed in his imagination. Kendy chewed the gluey cheese sandwich. National University might be big enough for both of them, but he didn't want to go here. He decided he'd be happier back in high school for his senior year.

"How would you straighten things out?" Mr. Smith said to him.

Shocked by the question and the fact that it was directed at him, Kendy tried to disengage his bicuspids from the cheese sandwich; he swallowed hard. "I guess I'd like to — the State Department — the diplomatic service — at least trying to maintain some communication between us and Russia, so nations would understand."

"Good for you!" His mother took him off the hook. "You can get an even broader education at Harvard. That's where nearly everyone in the State Department comes from anyway. Remember what a nice letter you got from the registrar. Next year when you're a senior they'll — "

"Mother!" Kendy blurted.

"Yes, I've heard that Harvard is a fairly good college," Mr. Smith replied calmly. "Because you're only sixteen, you could go there for two years until you're called up for your two years of Universal National Service to plant trees in the mornings and study patriotism in the afternoons, assuming your lucky number didn't come up for the draft."

Kendy looked away, his ears burning. Unsaid was how National University was a step ahead of other universities. To hell with that, Kendy thought, maybe he'd volunteer and join the Green Berets. However, Congress had decreed that two years attendance here at N.U. did count as the Universal National Service requirement.

"I'm going to level with you," Mr. Smith said. "National University is tougher in its way than Harvard, and you're only sixteen years old."

"Younger kids than that," Kendy muttered, thinking of Oliver.

"You think you can hack it here? The only kids who do make it are brilliant young men with great maturity and patriotism and *espirit de corps*." Mr. Smith stood up, and Kendy felt something slipping away.

Mr. Smith's hand closed on his shoulder. "Let me show you our squadroom. We call it the barn. There are ten guys on our team. I'd be your advisor if you want me." He squeezed Kendy's shoulder and smiled at his mother. "Excuse us for about ten minutes," he apologized. "Down

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where we're going is man's country."

Corn-ball, Kendy thought, but he couldn't help responding to Mr. Smith, although he couldn't quite understand why.

Their elevator plunged all the way to the minus-seven level. From the elevator, a metal bridge led straight across a shouting group of boys playing full-court basketball on the level below. There were whiffs of chlorine from a swimming pool somewhere as Mr. Smith led him from the bridge to a hallway dazzling with artificial daylight from the ceiling. The widely spaced doors were numbered.

"Squadroom Nine is ours. Nine! Nine!" Mr. Smith repeated, and the door finally buzzed and opened itself into a reception office which had been converted into a television room.

A burr-headed kid, who had been watching galloping mayhem, acrobatically yanked both feet off the coffee table and landed erect. "Hi! Sir, you're back just in time to help me with my calc."

"Then start doing it," Mr. Smith suggested, taking a backhanded swipe at him.

The kid ducked, laughing, and Kendy realized the boy liked Mr. Smith. While introducing them, Mr. Smith said seriously "Kendy will put some life in our basketball team."

Grinning at the compliment, Kendy felt himself being pushed by Mr. Smith into the squadroom. He squinted at its artificial daylight ceiling. As the images of clouds drifted across Kendy wondered if strato-cumulus clouds were forming up there in the real sky. He guessed this ceiling worked the same as the commercially suppressed television method his high school chem class had been allowed to play with; organic liquid crystals were sandwiched between panes of glasses. The inner surfaces of the glass had been coated with a transparent conductor. He remembered the maze of wires from the thousands of inductors on the back of the glass. The wires converged into the electro-optical converter box. When it was plugged into their video tape player, they watched a dim American flag waving inside the glass sandwich as if it were a flat television tube. When they raised the venetian blinds, increasing the light in the classroom, the flag had brightened. Unlike a television tube, the glass sandwich did not radiate light, but reflected it selectively.

And here beneath the artificial sky, Kendy saw that the primary illumination came from upward-aimed floodlights concealed in the walls. He wondered whether a T.V. camera on the roof was

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aimed at the sky. More likely a video tape player in some dark closet was connected to the electro-optical converter. Reacting to the moving tape, the converter was transmitting varying positive and negative charges to the millions of induction contact points on the back of the glass sandwich. All the fluctuating electrical currents were causing turbulence within the liquid crystals, varying their opacity, and thus varying the light-reflecting qualities within this glass ceiling so that clouds seemed to be drifting across a blue sky.

"Living together in one big room," Mr. Smith said, "helps all ten guys be good friends. There is more privacy than you'd have in the Army."

Kendy was staring at the stalls. There were five on each side of the grass-green carpet.

"This would be yours."

Its mahogany plywood walls provided head-high privacy on both sides, and its sawdust-colored carpet seemed springy beneath Kendy's feet. Along one wall, the wardrobe closets and built-in drawers could hold everything he owned. Although the stall was as big as a so-called double room in some college dorms, it seemed crowded, dominated by the electrically adjustable bed which hummed when Kendy pushed the HEAD-UP button. The pillow support was being tilted up within the bed's high redwood frame of adjustable shelves, overhead tensor lights, swing-out writing board, snack-box, television and cartridge stereo with earphones for slumber learning.

"With your long arms, you can rearrange all this built-in bedside junk so you can reach everything without moving your butt." Mr. Smith's gloved hand reached into the bed's adjustable frame and twisted a rheostat.

Kendy's vision seemed to be dimming. Above this stall, one rectangle of the squadroom's high artificial sky was darkening. Venus appeared and then the other stars in Kendy's sky. Curtains crept across the front of the stall. Mr. Smith yawned and opened a little door in its rear wall.

"Here's your private study cell." It had dark plywood walls and a low ceiling.

Kendy instinctively ducked his head. The study room seemed small, and yet it contained a darkvinyl couch and a matching chair, facing an educational console at least twice as wide as the one he'd been shown at U.C.L.A. Four graduate students had shared that console. This one gleamed with fascinating gadgets including an attached helmet and wristbands.

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"You can be your own best teacher. Be ten years before Harvard students get anything like this," Mr. Smith said, opening the cabinet above the couch, revealing a mini-refrigerator unit with a two-burner electric stove on top and pull-out counter underneath beside a small sink with built-in coffee brewer.

"Over here is your meditation room," Mr. Smith said, turning to the opposite wall and sliding open a narrow door. "The throne is comfortable, but these bathtubs are too short for stretched-out creative thinking. I'll show you my suite. I rate a six-foot tub."

IV

From Kendy's dim stall, they walked beneath the late afternoon sky in the squadroom to a panelled conference room at the far end.

"I referee in here," Mr. Smith said, slapping the back of his mahogany captain's chair in passing.

It was the only chair at the round table. The other chairs were stacked in a corner. Around the table lay upholstered seminar couches rumpled from use, and an aging banana peel sprawled like a brown octopus among the candy wrappers. Kendy thought this mess looked funny in such an expensive building.

There was a click as Mr. Smith unlocked the door to his suite. Smiling he gestured Kendy ahead into a panelled living room complete with fieldstone fireplace and birds fluttering around an iceberg in the artificial picture-window.

"I shot this rug with my little old M-16," M. Smith said happily, poking the polar bear's open jaws with his wide brown shoe, which appeared oddly short as if he lacked toes." Had to feed him a whole clip.In here's the dinette-kitchenette."

Kendy looked up at a reddish fish, resembling a salmon, displayed above the ultrasonic sink.

"Arctic char. When the rivers thaw, they'll even rise to a fly — well, at least to a fast-moving Silver Doctor," Mr. Smith said. "When I was starving, I caught a bigger char on ermine guts and a #4 hook, but that was in Siberia. I guess you've managed to deduce that I'm not the intellectual type. Maybe I'm supposed to counterbalance your professors. We advisors are." He opened a door. "I junked the government issue furniture in this bedroom and built my own. Check this homey touch."

The circular bed revolved. "Made it myself," Mr. Smith's voice continued proudly, but Kendy was staring at the langorous painting on the wall.

His imagination jumped at her.

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Since kindergarten, Kendy had been exposed to pregnant rabbits and see-through plastic ladies and "Growth" lectures and "Understanding Your Emotions" courses and "Marriage and Your Future Family" series nearly every semester so that his technical knowledge of female anatomy was impeccable, yet his imagination was driving him crazy. He devoured her with his gaze. Shamefully, he was still inexperienced, although he was halfway to seventeen and burning with desire. "That's — uh — pretty good painting."

"Can't bring girls into the squadroom," Mr. Smith said, as if reading his mind and flattering him. "I'm not kidding. We have to enforce congressional moral standards."

"Cars?"

"Now there's the magic word. Unfortunately not even our biggest athletic jocks are issued cars. I admit this puts us at a recruiting disadvantage. National U. is so new and our few classes of alumni are so scattered all over the world that practically nobody here can expect to find car keys under his pillow. You're not even allowed to keep your own car on campus until you're an Upper Division Student with at least a 3.0 grade-point average."

"You're kidding?" Actually, Kendy didn't own a car yet and was sure Mr. Smith knew it.

"The solution would be to garage your car in San Luis Obispo where the weekend action is. During the week I have to make bedchecks at midnight." Mr. Smith sighed. "But groovy guys use their ingenuity. Some have even built dummies that breathe to fool me. Then they go running away through the dark."

He clumped back into the living room, and his voice faltered. "Ken-Kendy, since I recruited you — I hope you'll sign up for my squadroom. I'm not trying to con you. You can get a good education here, and your country does need you. I'm not trying to set the hook in you."

Mr. Smith's face appeared almost twentyish, both eager and worried, as if he were once again a young — whatever he had been. "We want you. Listen, you can learn here whatever you really want to learn." He grinned, tightening away his jowls. "What the hell. Congress tells us to teach patriotism. But that's something you've got to learn for yourself... All right, let's go back to your mother."

In the coffeeteria, Kendy's mother stood up, hastily pushing aside cantaloupe rind. "You've seen everything by now, I suppose. Are you sure you want to — "

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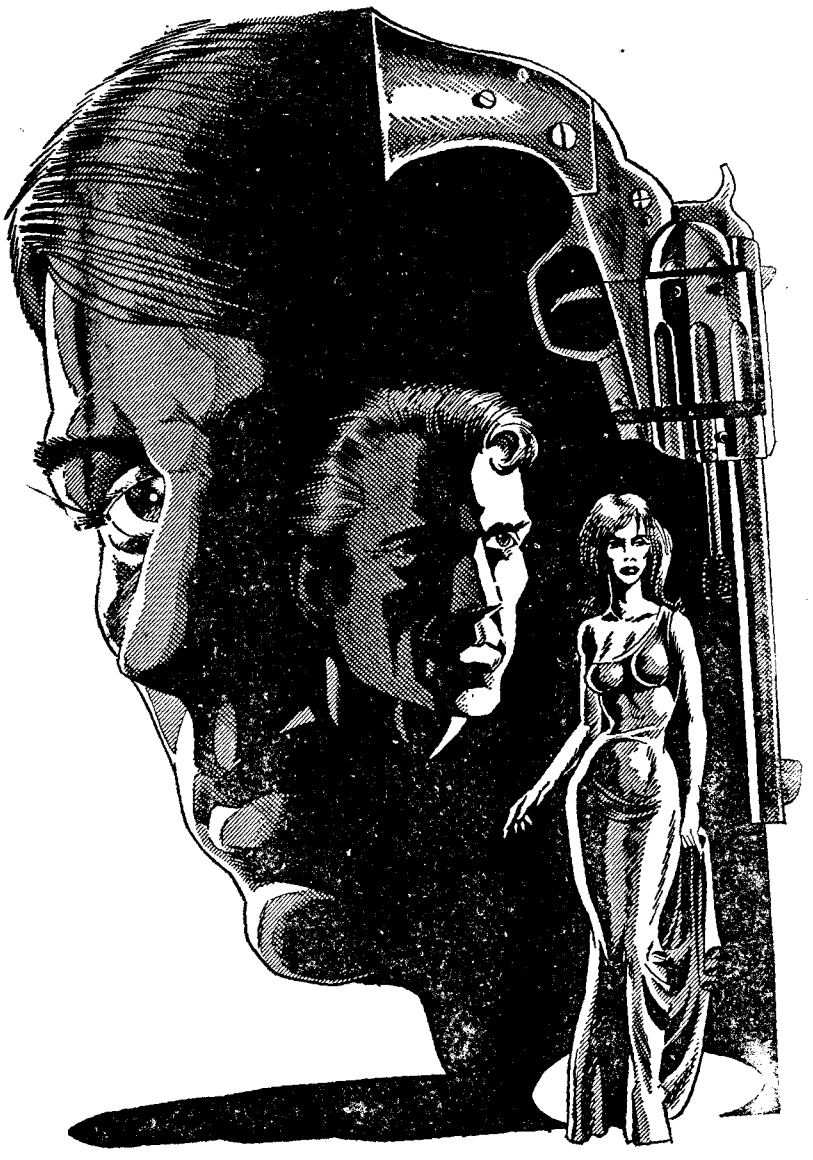

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"Of course I'm sure," Kendy retorted, although he hadn't been sure at all he'd intended to think it over. But he told her firmly: "Here's where I want to go to college."

Flying through the night on the commercial jet from San Luis Obispo to Los Angeles Off-Shore Airport, she asked him, "You're not making Mr. Smith another father-image like your jayvee basketball coach couldn't be — or something — are you?"

Kendy glared at her and barely spoke during the interminable landing pattern. Then he felt choked up and helped her into the periscopic stairway as if she were a little old lady. She was almost forty, he thought, with her remaining years dwindling away. He felt both protective and trapped. Trying to help her into the cab, he toppled in behind her.

"You can let go of my apron strings," she remarked, lighting a cigarette. "If this is the big split, I'm proud of you." She put her arm around him. "You'll make some girl a good husband." She laughed. "Don't let her, or anyone, con you any worse than these stinkers already are doing."

"Who's conning me," he said.

"My God, you don't know after today?" Her broad face quivered as if she were going to laugh.

He didn't want to know. Mentally he was packing his bags.

In their apartment, she looked up into his face. "And you don't even remember your father," she cried.

"I do," he muttered, wishing to God he did. "Nobody's going to con me," he blurted, unsure whether he meant Mr. Smith or her.

To escape, he went into the bedroom and tried to read the newspaper.

In West Virginia, the rebuilding of Tin Woodman had been held up by a wildcat strike, and the F.B.I. was investigating. Kendy shined his shoes on the *Los Angeles Times* editorial page which complained that the Soviet Union was interfering with our right to explore everything on the Moon. Their crawlers had blocked an American geological survey team outside the crater where the Soviet's vinyl dome was being inflated. After it had been pumped full of congealing bubblets, the Soviets failed to coat it with the usual aluminum reflectant, and Kendy wondered if this was because the dome would house some sort of broadcasting aerial. He switched on the bathroom television to Multi-News, where the grayish dome was under surveillance from the U.S. tele satellites.

With machetes, the Soviets seemed to be chopping headroom within the bubblet dome.

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They pushed out masses of bubblets like snow from the airlock and carried in equipment better suited for hard-rock drilling than broadcasting. Their next landing rocket disgorged what appeared to be an important personage. Clustering about him, the other space suits helped him.

In the United States, the latest unmanned Mars rocket ruptured itself during a static test. Reportedly, it had been reprogrammed to attach itself to Phobos in the manner of the unsuccessful *Lotka* II, hopefully to shuttle its landing module down to Mars. Now the Boar dof Inquiry decided it had been sabotaged.

Saying good-bye at Los Angeles Off-Shore Airport, Kendy kissed his mother. "Stay cool," her voice choked. "Don't let them con you. Stay free." In the jet, he tried to lose his emotions among the pages of the *Los Angeles Times*. Significantly, the convicted dynamiter of Tin Woodman was being exchanged for an American tourist who'd been convicted of a currency violation in Leningrad. Kendy wondered if the Soviets, muffled and gagged within their own security procedures, were trying to tell us something, using dynamite instead of words. Earlier this morning, Tin Woodman had been dynamited again.

On the bus from San Luis Obispo to National University, Kendy felt more concerned with his own problems. He was afraid Oliver would deliberately make trouble for him. But he grinned with excitement as he stood in the immense circle of tile-roofed buildings. He had a feeling of freedom.

Seven levels belows the surface, when Kendy lugged his suitcase into Squadroom Nine, Mr. Smith yelled with pleasure. "I have your class registration cards. Come on back to the conference room."

"I've been studying the catalogue," Kendy said, "and I have a pretty good idea what I want to take." He laid his list on the table.

"Good choices," said Mr. Smith. "But Russian would be an even better choice than Spanish. I don't want to pressure you, but as your advisor — " Both of them reached for the catalogue. But Kendy's hand was quicker. "Sir, I need only one more year of Spanish to — "

"You'll need more than one foreign language," Mr. Smith interrupted, "if you really want to be a diplomat." He awkwardly placed a gloved hand on Kendy's shoulder. "You'd better start studying Russian, from the — inside. For example, the word *mir* means world. Also *mir* can mean the pre-Revolution village and

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its decision-making method. The peasants discussed a problem until the village elder announced there had been a unanimous decision. All conformed. If you did not, you became an outcast. But *mir* means more than a village commune or the world. *Mir* also is the Russian word for peace. So their word for peace, *mir,* may have different connotations and implications in a Russian diplomat's mind than our conception of peace. If you're trying to understand this world, much less whoever's beeping at us from somewhere out there beyond Arcturus, consider that one man's peace may mean another man's poison. *Paz, paix?*"

"Peace in Spanish and French, I guess," Kendy muttered, knowing very well that this conversation was becoming an arm-twister to make him sign up for Russian.

"*P*ace," said Mr. Smith, raising his palm as if he were the Pope. "Interestingly, the word for peace in Roumanian also is *pace.* The Swedes, Norwegians and Danes all say *fred. Frieden* is peace in German. In Dutch, it's *vrede.* Czech: *mir,* like the Russians but pronounced a little differently. You can absorb the surface of another language every month, while you sleep, using the earphones and cerebral contacts in your bed."

Kendy opened his mouth. He wanted to continue taking Spanish.

Mr. Smith said: "You'll need to get beneath the surface of languages. *Mir* may mean peace to Russians, but Finns say *ruaha.* Turks say *sulh,* but Greeks say *irini.* Israelis say *shalom,* and Arabs say *salam.* Those are similar sounds which mean peace but not the same kind of peace. When you sign up for Russian here at National University you will be immersed in a Russian living experience for two hours a day so that you can get beneath the surface of the language. Let's consider the rest of your class schedule."

Mr. Smith laid down a card on which he'd written the titles of six courses. Kendy put his own list beside it. When his mother had looked over his shoulder at the catalogue, she'd said National U. must be returning to the Dark Ages. Instead of offering one or two big unified experimental courses per semester like other universities, National U. apparently expected students to sign up for five or six unrelated courses as in the 1960's when she was in school. She remarked that National U. might be trying to revive the Good Old 1950's when the present administrators were such silent college boys themselves. She said Kendy's list

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of courses seemed ridiculously old-fashioned. If she had seen Mr. Smith's list she would have squawked with rage and dissent.

Only American Aspirations was the same on both lists, and it was a required course. For Kendy's choice of Spanish IV, Mr. Smith had substituted Russian I; for Biochemestry, Integral Calculus for Physiology, Physics; for Political Science, Military Science and Tactics; and for Basketball, unarmed Combat.

"How come Unarmed Combat?" Kendy blurted.

"You already look good as a basketball player — when you mature," Mr. Smith tried to explain. "The only boys — men — allowed to enroll in Basketball for credit are the varsity players we've recruited, so we're looking forward to your helping us on the intramural dorm team."

"I didn't realize I was trying to sign up for the Varsity," Kendy murmured, embarrassed. "But how come Unarmed Combat?"

"One reason National University students are excused from the draft is because it's understood that they will take Military Science and Tactics and a physical education course such as Unarmed Combat."

"Oh?" Kendy considered standing up and going home, but he'd told all his high school friends he'd been accepted at National University, and he'd have to explain —

"Integral Calculus is a necessary foundation stone for any science today." Mr. Smith's gloved finger descended on Biochemistry, blotting it out.

"But I was a member of the Biochem club," Kendy protested. "That's where the future is — in the sciences."

"Okay, fair enough," Mr. Smith said so smoothly that Kendy suspected he was being handed a pre-planned little victory in exchange for something else. "If you'll scratch Physiology off your list, I'll scratch Physics off of mine."

"That's giving me the double shuffle," Kendy retorted, standing up, deciding to go home and to hell with it! "Where's the broad general education you were talking about?"

Instinctively, he was trying to enrage Mr. Smith so that Mr. Smith would be the one to make the break and kick him out. Or if Mr. Smith had laughed, Kendy would have been able to get angry enough himself to break free. But Mr. Smith peered up at him with a hurt expression.

"Ken — Kendy, you *will* get a broad general education. This seminar that I lead — see its title is American Aspirations. The eleven of us meet right here in

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this conference room every day discussing our futures, and that is what I try to do. This is what I want to do. This is why I'm here, to be your advisor — for your own country. Your country needs help. Don't just ask what your country can do for you."

V

After Kendy had signed the six class registration cards and wearily unpacked in his stall, he met the other nine boys in Squadroom Nine. He decided this was the last time Mr. Smith would con him. He didn't ask which squadroom Oliver inhabited.

That night in the cafeteria line, he saw Oliver's pale face. He imagined a gulping sound as Oliver looked away. Clutching their trays, they drifted in opposite directions as cautiously as two scorpions in a very large bottle. Kendy knew this eight-level underground dorm building contained nearly eight hundred students. Unfortunately, Oliver's squadroom also was located on this minus-seventh level. Six times a day they passed each other in the hall without speaking. Sometimes Oliver would be trotting to keep up with a huge blond boy who sported a military crew-cut and a razor-nicked chin. By contrast, Kendy was becoming enamored of the one girl he saw regularly from a distance of about ten feet, the teaching assistant in charge of their biochem lab section, but he didn't follow her around. She was at least nineteen and very serious, quietly trying to maintain order. But that damned Oliver was in the same lab section, noisily showing off his superior knowledge of all the positions of adenine-thymine base pairs which rat-ify the double helices of a rat's genes.

Kendy was pleasantly surprised to be elected Representative for his squadroom, even though five of his squadmates were sophomores. For some reason, none of them wanted the job. Every Thursday night, as Representative, he had to attend the Seventh Level meeting.

The Seventh Level President turned out to be the huge blond boy with stubble on his head and shaving scrapes on his chin. He came from Oliver's squadroom. His name was Rog, and he was in training for the State Department. When a squadroom representative stood up and mumbled about saltpeter, and blurted that his constitutients wanted an investigation of the cafeteria food, Rog banged his gavel. "A little saltpeter won't hurt what you haven't got. What is important is for Seventh Level to get re-

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venge for last year. I want each Rep to go back to his squadroom and find out which guys got letters in basketball in high school, and I want all of them out on the court in their shorts in one hour. Now let's hear a motion to adjourn this meeting."

Kendy made his third mistake by watching that intramural basketball practice. In his street-clothes because he lacked a varsity letter, he stood on the bridge above the Eighth Level court. Rog lumbered out on the floor with an orange ball and tin whistle and with Oliver trotting behind. Carrying a clipboard, Oliver was chattering excitedly. Kendy looked down at them. The view from the bridge distorted Rog so that he looked like a squatty football player, and this same foreshortening effect made Oliver look as though he'd been stepped on. As seen from above, Oliver's head was slickly black, while Rog's appeared pinkish because his blond hair was cropped so short.

"Where are all my men?" Rog kept shouting.

Eight men finally straggled onto the court, enough for two practice teams by the new college rules. The four-man team rule had been intended to reduce congestion under the baskets so that basketball would become less of a contact sport. Rog ran them through a lay-up drill, in which some farmers took off on the wrong foot. When they started practicing three-point set-shots from the outside, Kendy thought the lighting might be bothering them. When Rog tried to referee them in a practice game, some kept fighting for the rebounds after each missed free shot, as in high school rules, while others protested that in college the foul shooter got to take the ball out of bounds after his free shot, whether he made it or not. This frequently revised college rule was supposed to discourage intentional fouling and speed up the game. The players ran slower and slower because they were so out of shape.

Ignoring Oliver, Kendy wandered down beside the court, fascinated by the ineffectual and missed lay-ups. He thought the players must have won their letters at extremely small high schools. When Rog finally allowed the wheezing sufferers to depart, the sweaty ball rolled toward Kendy.

He knew what he wanted to do, but he was hesitant to do it, so he ignored Oliver and did it! Dribbling smoothly and flexibly toward the basket, he tried a relaxed right-hand lay-up, softly off the backboard and in. Warm-

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ing up, dribbling faster with his long leg muscles loosening until he felt light-footed as a grasshopper again. He tried a left-hand layup. Beautiful! Because Rog seemed to be leaving, Kendy raced around into a dribble-drive toward the right side of the backboard. With a fierce gasp, he leaped high, stretching higher, slamming down the ball through the hoop in a right-hand dunk shot that banged his little finger against the iron rim. Dropping from the air triumphantly, he barely felt the pain.

"Where'd you letter?" Rog demanded. "You look better than those farmers."

And Oliver was staring with hatred so obvious Kendy felt as if they were back in that camp for gifted children for an instant with Oliver gulping and his sharp face so contorted he seemed ready to spit.

Kendy had made the team.

"You're my forward," Rog said, ignoring Oliver. "Let's hit the showers." Oliver was left standing.

When they came out of the locker room, Oliver came scrambling down the staircase from the Seventh Level, breathing hard as if he'd run back to his room. "Rog, I have the rest of that good pie. It's in my mini-frig."

"We'll go up to the coffeeteria so Kendy can come along." Rog ambled to the elevator, talking to Kendy, while Oliver trotted behind, chattering desperately.

In the coffeeteria, the clean-up men were turning off the lights, but Rog laughed at them and handed Kendy a three-flavored Sundae from the machine. The two of them kidded around. Kendy had learned how to get along with football jocks in high school, where most of them had supported his unsuccessful election campaign and Rog didn't seem too different.

Oliver shut up, gave up and went down. Kendy felt malicious triumph. Finally, Kendy was getting Rog another round of Cokes, and Rog was laughing and slapping the infrared machine and chasing away the janitor, who kept trying to turn off the last light, when Oliver reappeared, his pale face seeming even narrower from rage. He gulped and smiled at Rog. "This — frosh — " He turned his sharp face to Kendy. "He keeps saying he's a better shot than you."

"He is. He is," Rog laughed, crushing his own paper cup into a ball but missing his one-hand set shot at the Coke machine.

"Not with a gun," Oliver said.

"Yeah, I'm also captain of the rifle team." Rog grinned at Kendy and fired his imaginary submachine gun at the janitor.

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Oliver ennunciated with practiced clarity. "You haven't seen the little Czech Model 81 they have added to the collection."

"Uh-uh." Rog reloaded his invisible sub-machine gun. "What you trying to pull this time?"

"It's a really cute little fire-spitter," Oliver remarked, and then his voice rose uncontrollably. "Even loaded with the twenty-shot magazine, it weighs only four pounds because it fires caseless ammo, electrically ignited."

"What am I supposed to do, dream about it?"

"I have the key."

"The hell you say!" Rog lowered his voice.

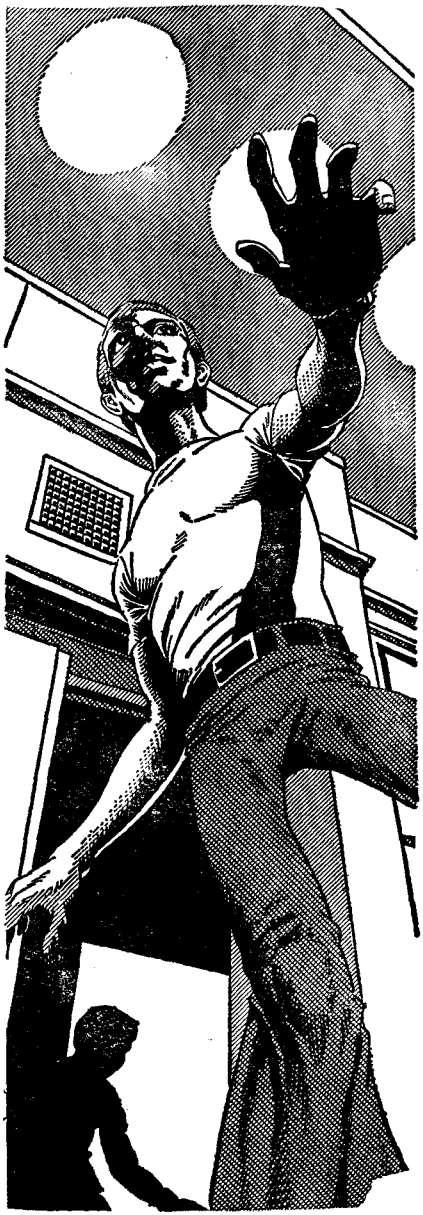
"Kenny, or whatever your name is," Oliver said, smiling as if this were the first time they'd met, "why don't you go to bed?"

"Okay," Kendy replied, smiling back at Oliver and feeling cautious rather than angry because he was being challenged he preferred bed to trouble.

Unexpectedly, Rog draped a heavy arm around him. "You come with us, Kendy. If this little spook can really open the Trophy Room, you'll want to see those crazy contraptions we — they — someone took away from the K.G.B., so come along with us."

Kendy grinned defiantly at Oliver.

The dim hallway was empty. As always, the sliding grillwork



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door was locked. Now the inner steel door also was locked. They couldn't see into the Trophy Room. To Kendy's surprise, Oliver had put on black silk gloves. Deftly as a surgeon, he inserted the key, turned the lock, spread apart the grill doors. He leaned inward to unlock the inner door, using the same key, and Kendy began to worry that there might be an alarm system.

As Oliver opened the inner door, no alarm sounded. Oliver pocketed the key, and Kendy realized that not only had the same key fitted both locks, but it was such a simple back-door key that any shrewd kid with a file could shape one. Kendy blinked at the darkness. It didn't seem reasonable for this Trophy Room to be so ineffectively guarded. With all these kids living here, this seemed as negligent as leaving a bulldozer with its motor running; it was an attractive hazard. It was so easy to break into, he couldn't understand it.

Rog's powerful hand yanked Kendy inside, and Oliver slid the doors together like jaws closing. In the darkness, a penlight glowed between Oliver's curled fingers. Kendy put his hands in his pockets, afraid of touching anything and leaving fingerprints. Rog slapped down one big hand on a glass-topped case and reached behind it. "Hey, yeah, this Model 81 has an image-intensifier." Rog's dark shape turned toward Kendy. "Man I can really see you through the tube! Your forehead is sweating."

"Got something better for you," Oliver's voice hissed.

He had laid his glowing penlight on top of a glass case and was dragging out a shiny double wand entangled in wires. It scissored like an obstretrician's forceps, but it was longer and its tips were different. "You act like you're afraid of guns," Oliver remarked moving toward Kendy.

"I don't take them to bed with me at night," Kendy retorted, nervous because Rog kept aiming that Model 81 at him and emitting put-put noises. "I'll bet you love guns so much you've got a big gatefold colored picture of a gun pinned above your bed with a staple in her navel."

Oliver tittered. "You're talking about Rog. That's his hang-up."

"Beautiful gun," chuckled Rog, stroking the long steel receiver of the Model 81.

"Rog, you subscribe to three gun magazines," Oliver hissed, hissed, "so Kendy is saying you are some kind of a pervert."

"No," Kendy protested.

At the same time, Rog grunted: "You're kidding. I hope you are kidding." He was peering at Kendy.

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Kendy took an angry step toward Oliver.

"Catch," said Oliver, tossing the gleaming crossed wands with trailing wires straight at Kendy's face.

Kendy flinched. He could have dodged, but the metal rods would have struck the floor with a loud noise, so he caught them in mid-air.

"Hold the other end, stupid," Oliver said. "You want to get electrocuted or something? Hold the insulated handles." He scurried toward Kendy and hooked the heavy battery box on Kendy's belt. Spread the handles so the forehead contacts open wider, a little wider than my head." Oliver flipped a switch on the battery box, and it hummed against Kendy's hip as Oliver backed away. "Wait till I put on mine."

Oliver was making nervous gulping sounds as he scuttled behind the counter and dragged out another battery box wired to gleaming forceps with insulated handles.

"You probably don't even remember, you big bully," Oliver's voice husked at Kenedy. "You sadistically broke my nose, you son-of-a-bitch." He was shuffling toward Kendy in the semi-darkness with the spread forceps gleaming in front of him like crossed sabers. "I told you I'd get you someday, you big bastard. With these we're the same size. *En-garde!*"

Unsure if he were kidding, Kendy prudently retreated, holding his forceps in front of him like a shield. "I didn't break your nose on purpose."

Backing away, Kendy wanted to escape, to run, to pull the doors open, but he would have to turn his back to Oliver. "You must be crazy."

"He's always kidding around," Rog said calmly. "Teasing bigger guys like this, because he's so little he thinks he can get away with it. If he bugs you too much, kick him in the groin. He'll only run and complain to me. That's what he does. He thinks I'm his mother hen. Don't you, Oliver?"

Oliver emitted a wheezing noise as if he were laughing or crying. Kendy took another backward step, feeling cornered, preparing to dodge behind the glass case.

"What happens if your rods touch his," Rog's voice laughed. "Big sparks?"

"Stand and fight," Oliver wheezed as if he were serious. "Nobody will get hurt. You won't remember a thing."

"Ollie's playing he's in the K.G.B.," Rog said. "Like when a Russki creeps up behind a defector and clamps the contacts on his head and he even forgets how to dress himself. Like a baby, he

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has to learn to talk again. He doesn't remember anything to tell."

"Will it really do that?" Kendy asked, embarrassed by the shrillness of his own voice and more afraid they were playing a practical joke on him.

He didn't like being laughed at.

"Depends on the voltage." Oliver laughed.

"Hey, Oliver," Rog asked, "did you really put the batteries in these lobotomizers?"

Oliver lunged too quickly for Kendy's feet to move. As Kendy deflected the thrust by raising the rods of his own lobotomizer, there was no spark. Kendy lurched behind the glass case and compounded his panic by suspecting Oliver's lobotomizer was operative and his was not.

"Coward," Oliver giggled.

Retreating, Kendy gripped the closed handles like the club that had been the caveman's lobotomizer. He felt like screaming or climbing the walls. If this were a joke and he clubbed Oliver on the head, there would be an investigation. He didn't want to be expelled. Maybe Oliver was trying to get him expelled as he had done from that kiddy kamp. Retreating, Kendy unhooked the humming battery box from his belt and tried to think ahead.

"You see, he's chicken. He'd never make your stinking basketball team," Oliver cried. "Stand and fight you thin-skinned bully."

Kendy edged toward the door, defensively holding the lobotomizer in front of him while its heavy battery box dangled by its wires from his other hand. As Oliver lunged, Kendy side-stepped, swinging the battery box past Oliver's knees and around them. As the wires jerked, Kendy let go of the lobotomizer, and Oliver clumped to his knees.

"You bastard!" Oliver squeaked, rolling over, entangled by the wires, battery box and lobotomizer. Then he began to giggle again as Kendy lurched against the door handles.

Hunching his shoulders, Kendy struggled to pull apart the steel inner doors. They slid apart, and he collided with the outer grill as Oliver's shrill giggles and Rog's hoarse guffaws attacked him from the rear. He fought the grill open and fell down in the corridor.

" — bluffed him," Rog's voice laughed, "and I liked him better than you, you little rat . . . Ollie, the switch on this handle — you didn't show him how to turn it on, you little sneak. Sleep with it!" There was a loud clunk as if Rog had dropped the lobotomizer beside Oliver.

"Don't go, Rog," Oliver's voice rose. "You haven't seen the Chi-

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com AK-90 yet. It shoots rocket-assisted 20 millimeter bullets that explode. It takes a big strong guy like you to hold it."

"You're a dirty little freak," Rog's voice accused.

"Close the door, please, Rog." Oliver's voice sank as Kendy stalked away along the corridor. "I showed you I have more guts than he does," Oliver's voice implored. "I'll show you I can drive him out of the University."

"Forget it, you poor little spook —and stop following me around," Rog's voice rumbled. "Put those lobotomizers back in their cases," his hoarse voice went on as the steel doors clunked shut. "What are you — "

VI

Kendy stopped where the hall turned right. His stomach hurt. He felt like crying. He was so angry with himself for being humiliated that he wanted to kill Oliver. He imagined his fist smashing Oliver's nose. "That's what he wants — to get me expelled." Kendy vividly remembered packing his bags in that camp for gifted children. "He'll goad me until I beat hell out of him." But Kendy felt Oliver was smarter than that now. "He hasn't got the guts. He'll use his brains."

Kendy's own stomach felt so disturbed that he went into the hall restroom. He sat in a stall remembering that his fingerprints were in the Trophy Room on the door handles and smeared on the glass cases and on the lobotomizer. Oliver might leave that lobotomizer lying broken on the floor deliberately. The security guard would find it when he unlocked the Trophy Room in the morning. There would be a quick investigation.

On enrollment day, as at the State Universities, the thumb and index finger prints of all the new students had been taken. But National University was toughest, he thought. Not only had they expelled the freshman who had *lid* in his suitcase, they'd turned him over to the San Luis Obispo sheriff's deputies as a minor to be charged with possession of marijuana and while he was being held in County Jail the federals had done a recheck in his home town, opened sealed juvenile records and found he'd confessed to presenting an adult's driver's license during an attempt to buy a six-pack of beer. So now they were charging him with the federal offense of falsifying his application for enrollment at National University, in which he'd signed that he was of good moral character.

Kendy's guts felt watery. He sat there idly reading the graffiti. A couple of them were defiantly

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funny. He began to feel better, less paranoid, he decided. Maybe he should simply do nothing. If Oliver did try to frame him, he'd simply tell the truth to Mr. Smith.

His eyes blurred. At least he'd find out if Mr. Smith really was his friend. He closed his eyes. His thoughts were confused.

The investigation at least might discover a few of Oliver's gloveprints upon his own greasy fingermarks, or Rog would talk too much. All three of them might be expelled together. Kendy thought if Oliver used his brains instead of jealousy, he'd realize a frame-up was too risky, particularly because he couldn't depend on Rog. Rog had seemed ready for a permanent split. Oliver would have to face it. Kendy thought Oliver might end up hating Rog more than him. The thing to do was to wait it out; if nothing happened, it was best not to get involved between those two any more. Kendy walked out of the restroom feeling considerably better.

He believed Oliver would retain enough cool to put all the guns back in their proper places, or Rog would. But he walked back around the bend in the hallway.

Ahead of him, the four lines where walls met ceiling and floor seemed to converge. In the distance, beside the wastebasket on the floor, a shapeless hulk moved. Kendy blinked. His throat made a choking sound. He wanted to retreat to the safety of his bed. The hulk was trying to crawl farther from the Trophy Room, dragging its right arm and left leg as if partially paralyzed. Kendy wanted to be somewhere else. He wanted to believe he was an innocent bystander who could sneak away. He tottered, and the hall seemed to be tilting downhill toward Rog's spastically crawling body.

The huge guy tried to rise, but his dragging left leg seemed to be pulling him down. His right arm flapped feebly at the air like an uncoordinated seal's flipper, and his face sank to the floor.

"I'll kill the little bastard," Kendy whimpered, swaying as if his own body didn't know which way to move.

He ran to Rog and tried to hoist all that bone-heavy weight to a sitting position against the wall. In the opposite wall, the grillwork door of the Trophy Room and the steel door behind it both were closed as if nothing had happened.

"Where's Oliver?" Kendy asked harshly.

Rog emitted a gurgling sound, trying to speak. Kendy noticed an odor like burnt hair and a dime-sized blister on the side of his head. The whole right side of

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Rog's face was twisted down, and the words slopped out thickly. "— mm I drunk again?"

Kendy wished he could believe it. He struggled to hoist the uncoordinated weight and put Rog on his own right leg. With his shoulder under Rog's left armpit, Kendy tried to maneuver them up the hall. He wanted to sneak the gurgling body back to its own squadroom. In Rog's own bed maybe he could sleep it off and in the morning awaken as Rog again. Kendy wanted to believe that.

But they weren't going to make it. With shivering legs, he managed to support Rog as far as the hall restroom. They toppled in. Falling away from Kendy's grasp, Rog barely missed hitting his head on the basin. He hit the tile floor instead. Kendy winced.

Rog rolled over and sat up, rubbing the side of his head with the wrist of his good arm and peering up at Kendy. The black pupil of Rog's right eye was much larger than his left. "You slugged me — from behind?"

"No." Kendy wanted to leave him there. Now this mess would get all three of them expelled. "Don't get up," Kendy protested. "You'll fall down again. I"m going to go get Mr. Smith."

Kendy felt a rising sensation, a warmth that made him want to cry. He couldn't understand it. He wanted to believe that Mr. Smith would help him and cover for him and to protect him like — as if — like a father. But he was afraid it was going to be the same as the time when the jayvee basketball coach had let him down.

His advisor lay on his back on top of his round bed, asleep in his underwear with the light on. His stubby, bare feet pointed at the ceiling. One foot had a little toe sticking up. From the other foot, all the toes had been amputated. Kendy glanced from the photograph on the dresser, which showed three men grinning in furry-rimmed parkas, to the neck of the fifth of bourbon protruding from the top drawer.

"*Panidyelnik?*" Mr. Smith muttered, screening his eyes with a gray-gloved hand. "What are you doing in my room?"

"Sir, I — sir!" Kendy spilled it all, his voice shaking with fright and embarrassment and rage.

"You don't want to be expelled." Mr. Smith closed his eyes.

"No, sir. I want to stay here, sir. Yesterday, in our American Aspirations Seminar, you were saying one for all and all for one."

"Yeah," Mr. Smith muttered. "I guess you're the one." He rolled off the bed, stumped across the floor to the closet, and shrug-

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ged into a faded silken black and red robe with the white letters AIR-SEA RECON 3 embroidered across the shoulders above a downward-diving red-white-and-blue dragon with its wings folded beside SCUBA tanks and swim fins.

"What time?" Mr. Smith laced on his special shoes and looked up at his calendar clock. With one gray hand he slipped the whiskey bottle from the drawer into the deep pocket of his flam-buoyant silk robe and grinned at himself in the mirror. "You superannuated old spook, we do the impossible."

As he faced Kendy, he looked oddly young again, and his smile thinned and died. "I hope they're just putting you on for laughs. I hope that's all."

They found Rog crawling in the hall.

"Hold it, you big poker." Mr. Smith frog-marched Rog back into the restroom and pushed him up against the tile wall. "You're not faking. One pupil's dilated. Who?"

"Bedcheck," Rog mumbled. "Gotta go to bed."

"You slipped and hit your head on this basin," Mr. Smith said. "Drink this." From the pocket of his robe, he hefted the sloshing brown fifth. He twisted out the cork. Like a gray octopus, his gloved hand squeezed Rog's throat below his paw so that his mouth opened. Mr. Smith poured it in while Rog gagged.

"I thought you were our champion boozer?" Mr. Smith grunted. "No wonder you've been dizzy, half-paralyzed. Stop drinking all this rot-gut. I'll pour the rest into the basin, down the tubes. You can't handle hard liquor any more, but I won't say anything. I'll cover for you if you'll forget what happened. Forget it all. Don't say anything. Don't answer any questions. You're so drunk you need a medical check-up after falling and hitting your head."

Between them they supported Rog, walking him along the hall to the elevator, to the dispensary and into the isolation room. "Lie down. Dream you have the measles. Kendy, find him a hospital gown."

After a long time, Mr. Smith returned with the doctor. By now, Rog was able to control his right arm fairly well. During the encephalographic examination, his eye-pupils began to equalize. The doctor said he might have suffered a concussion and should be kept under observation for twenty-four hours. "Also, young man, with your encephalogram, stop this drinking before it's too late."

Mr. Smith grinned. "Rog, you

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know you could be expelled for boozing in a federal dormitory. We'll keep our mouths shut. You do the same."

The clock indicated 2:42 A.M., and Kendy felt dizzy with weariness. He felt fragmented. He hoped Rog would be all right. Mr. Smith shrugged. "Let's go for a walk. You know where?"

"You think he's still in there?" Kendy mumbled when they stood in front of the grillwork door to the Trophy Room. "It's locked."

"You want a key?" Mr. Smith laughed. "I'll tell you where the legal key to the Trophy Room is hanging in plain sight in the building superintendent's office with a concealed camera aimed at it from the ceiling. I'm not going to try to steal for you. I don't want to lose my pension."

"It's a trap," Kendy muttered, dimly realizing that such a simple key deliberately hung in plain sight had been an invitation to copy it. "Got to find Oliver and take his key away from him."

"If he's not inside," Mr. Smith said softly, hooking his gray fingers in the grillwork door to the Trophy Room.

"My fingerprints are inside."

Kendy couldn't understand why Mr. Smith kept smiling at the ceiling. At any moment, the night security guard might happen to look down this hall and catch them. Kendy looked back.

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He caught Mr. Smith grinning at the ceiling as if there were a surveillance lens up there. But the hall seemed nothing but smooth surfaces except for the waste-basket on the floor. Kendy groped downward through paper cups and candy wrappers until he found the key.

"You just improved your grade," said Mr. Smith.

Lacking gloves, Kendy used his handkerchief when he unlocked the doors to the Trophy Room. Mr. Smith grinned and clumped straight across the dark room to the light switch.

On top of the glass case lay the Czech Model 81 sub-machinegun, which Rog had been playing with. Kendy stared down at both lobotomizers lying on the floor. The wires of one lay twisted beside its battery where he'd entangled Oliver. The other was nearer the door. Beside Kendy's foot gleamed droplets of blood as if Oliver had ended up with a bloody nose. "That crazy little idiot. I can't understand why he would attack Rog. I thought he hated *me*."

Frantically, Kendy began wiping off the lobotomizer he had handled. "Maybe Oliver's still in the building, and he's gone to get the security guard. Maybe he's set a trap for me."

Mr. Smith had closed the steel doors, and he had started polishing the glass cases with the sleeve of his robe. "If you luck out of this without being expelled, you will be older, maybe wiser. What a guy needs is a girl-friend. Understand?"

"What?" Puzzled and weary-eyed, Kendy peered at Mr. Smith, who had picked up the little submachine gun.

This late at night or early in the morning, Mr. Smith suddenly looked at least fifty years old and increasingly worried. "God! Five more years until my full pension, and I could blow it all for helping you. This is federal property. Breaking in here is a federal offense."

Mr. Smith abruptly returned the gun to its glass case. "I must be nuts helping you, risking my pension after spending my whole life from the age of seventeen in the service of my country. Two undeclared wars, wounded twice. That was nothing. Since then I'm one man who's earned his pension. God, it was cold up there! Ever heard of Vorkuta? After two years I was exchanged for a covert Soviet agent who'd been framed for rape in Boston because he put his arm into a hollow tree. The micro-film already had been removed from that drop. Glorious exchange! I came back to the United States with no fingers. You don't understand what

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I'm feeling, so hurry up and let's get out of here."

Mr. Smith looked like a frightened old man.

Kendy realized Mr. Smith had been put out to pasture at National University. At that moment, Kendy felt both sorry for Mr. Smith and grateful to him. Mr. Smith's gloved hand closed on his shoulder and shoved him gently toward the door. Quietly they slipped out of the Trophy Room.

"Lock the doors," Mr. Smith whispered. "Start worrying about the key."

Kendy swayed, dizzy with weariness. He thought he should dispose of the key, not merely hide it.

" — to do about Oliver . . . we go . . . our Squadron." As if from a great distance Mr. Smith's voice was saying: " — a Serious talk about your future."

"Excuse me," Kendy muttered, realizing he'd been clinging to Mr. Smith's arm. "I guess I've got my share of — emotional problems."

VII

Blearily, he followed Mr. Smith through the sleeping darkness of Squadroom Nine, shuffling across the grass-like carpet beneath the glittering stars and into the conference room. From across the mahogany table, Mr. Smith reached to push the coffee burbler toward him, but Kendy shook his head.

"I want to thank you." Kendy felt choked by another surge of emotion.

Mr. Smith's aging face peered through the steam rising from a coffee cup. "Will you do me a favor?"

"Gee, yes." In that moment of sleepy gratitude, Kendy would have done anything for him as if . . . Father, father!

"Next year enroll as a freshman at U.S.C."

"What? What?" Kendy's voice broke in disbelief and anguish. "You don't want me here?"

"Don't look like that. You can come back here after two years. We'll send your scholastic records to the U.S.C. registrar — showing you were an honor graduate from an exclusive prep school which we subsidize near Palo Alto." His gloved hand reached across the table toward Kendy, and he tried to laugh. "On your prep school records, if you like, you can be shown as President of the student body."

"Of a high school which does not exist? What are you trying to do to me? First, you recruited me; now, are you flunking me out?"

"We need you." Mr. Smith's smile shivered between aging

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fright and youthful enthusiasm. "There are two important things we need you to do while you're young enough to do them. The first is for practice. Like other colleges, the University of Southern California enjoys research contracts funded by the Defense Department. But here at National University, we have the most important contract. We test the security precautions at the other universities. You'll enroll at U.S.C. and — "

"You want me to infiltrate U.S.C.?" Kendy blurted, his leg muscles tightening. "Like a spy."

"Sit down. You'll simply be assigned one easy security problem to be completed during your first year. That's how you are earning your tuition right now. Don't get up. You have a bigger problem right now. You are one of three students who broke into a federal security area, the Trophy Room. Rog's recovering from an — accidental — mental overload and probably will be expelled for something else. Oliver seems to be in hiding, but possibly will be retained here and protected. You're sitting here because I'm protecting you."

"I'm going home."

"If you did, there'd be an official investigation as to why you left. I couldn't protect you. I'll be arrested too, unless I cooperate with my superiors. Because you're a minor, you'd probably be remanded to the security building of the California Youth Authority until you're twenty-one. At that time, there'd be a federal court trial under security conditions. Unless the National Emergency has been repealed by then, you'd probably serve 10 to 20 years as an adult."

"For what? For what?"

"Obviously for breaking laws. With so many new laws, you break them by breathing. Ever since Congress declared the National Emergency, for nine years they've been passing more and more stringent laws, trying to keep the lid on. At least let me cover for you."

"You're conning me," Kenny cried, "not helping me. You waited like a — vulture for me to make a mistake, for me to break a law. I refuse to be a spy."

"That's the wrong word." Mr. Smith's face flushed. "You won't be a spy. You're not qualified to be a spy. You'll simply be a freshman who has been assigned to photograph a classified centrifuge. Because all this research is being sponsored by the government and paid for by the government, surely the government has an obligation to test the security procedures. If you complete your assignment, we'll simply mail the photographs to the

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Chief Security Officer at U.S.C. along with an explanation of how you penetrated their security, so that he can make the necessary corrections."

"If I'm caught?"

"We'll notify the F.B.I. and the whole thing will be hushed up. Happens every day. This is necessary if we're to maintain any security in this world. What a paradox! Fortunately, those brave men you mistakenly criticize and denigrate and mislabel as spies are much more skilled and intelligent and enlightened than you could ever be!" Mr. Smith seemed genuinely angry. "Intelligence-gathering services are doing more to prevent war than diplomats It's the intelligence-gathering services of all sides who are restraining the so-called statesmen from more miscalculations which could kill us all. How well I know! That's why you're alive today — ungratefully sneering at — spies."

"I wanted to be a diplomat — not a stinking spy."

This time Mr. Smith didn't get angrier. He wearily smiled and said: "You'll learn. You're too honest with yourself to be a diplomat in this world. Diplomats have to wear their heads twisted backward. They can't negotiate realistically because they're talking backward to impress their own people. But the people are confused and angry at everyone because the world's too complicated for them to understand. That's why the so-called democratization of Russia is increasing the threat of war. Their acrobatic diplomats are performing for their own people, who don't know what they want. Ours are talking toward the American voters. So there's less and less genuine face-to-face communication between the diplomats. In effect, they're blindly bumping bottoms, while reciting to please their own people."

Mr. Smith managed to grin, tightening his jowls until he appeared thirtyish again. "Believe me. It's the intelligence-gathering services who try to listen to what the other side really wants, what the other side is afraid of, what the other side can do. It's the intelligence-gathering services on both sides who have been preventing miscalculations by the politicians. To prevent wars and riots, the intelligence-gathering services are beginning to enter the communications media, trying to modify public opinion. The intelligence-gathering services have been trying to save us from chaos, while you wrinkle your nose at spies."

"You've conned me from the day you started recruiting me."

"Did I tell you to get mixed

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up with a slob like Rog?" Mr. Smith's grin became infuriating. "And a potential little genius like — "

"No! You simply waited for me to fall into any trap."

"If you believe that," Mr. Smith said, "consider it part of your education."

"You've screwed up my education. You changed my class schedule until biochem is the only significant course I have."

"You can become a biochemist if that's the life you want. You will have the opportunity to learn lab techniques more advanced than any in the United States, because U.S.C. has just recruited an old fan from overseas who now calls himself Dr. Magadan Smyert. He was E. Vavilov's teacher."

"It's all got nothing to do with me," Kendy cried, protesting everything, but reluctantly remembering that this Dr. Smyert, or whatever his name was, had escaped to the West a few weeks after Dr. E. Vavilov's return from Phobos. This Dr. Smyert claimed to have no knowledge of why *Lotka* II never descended to Mars. He claimed he had been in Leningrad, working in a different administrative pigeon hole, where he had been relegated to planning simpler laboratory procedures which could be taught to unskilled student-technicians.

"Everything in the world has something to do with you." Mr. Smith sighed and cautiously laid his gloved hand on Kendy's shoulder. "I've saved you from being expelled, jailed or drafted. All I'm asking from you is a minimum of patriotism."

"Damn it," Kendy cried shrilly, "my mother warned me about guys like you. You keep trying to con me."

"Your mother is a shrewd wo— lady. I don't understand your mother. She's patriotic, too, in her own way. But she's tangled in the past as she remembers it before the National Emergency. All the labels have been changed since then. She would have been called a liberal then. She's considered a chaos-worshipper now. What does she want? A return to disorder in the streets?"

"I'll be damned if I understand what's going on now," Kendy muttered, swaying toward sleep again.

"You will be damned," Mr. Smith muttered, helping him up. "In the meantime, we struggle among ourselves. We can't understand the noises from galactic space. We don't even know why the Russians retreated from Phobos or what they've found on our Moon. They've drilled into something under that plastic

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dome." His voice grew more tired. "We don't know why they retreated from Phobos *as if they were afraid.* They've managed to maintain such superb security. We can't get near E. Vavilov. You claim it's got nothing to do with you. Listen, kid, any new knowledge is like the sharp edge of a weapon emerging. It will have a lot to do with us all."

He pushed, and Kendy tottered out of the conference room, into the darkness of the squadroom, under the artificial stars, crossing the grassy carpet toward his stall, with Mr. Smith pushing him.

"A few hours sleep," Mr. Smith whispered, "and you'll know I'm right."

"About what?" Kendy mumbled. "U.S.C.'s only one. You said two. What's the other thing I'm supposed to do?"

"They didn't tell me."

Kendy collapsed within the framework of his bed and rolled on to his back in an agony of exhaustion beyond sleep. Alone beneath the star-spangled false sky he felt empty grief. "Not my father." He stared at the rising Moon in the glass sky. "Nobody." Blinking at a red star, he thought it shouldn't be so close. As his eyes opened and shut and opened, it seemed to move like a planet — like Mars.

When he closed his eyes against it, he saw a bright speck separating from it and enlarging toward Earth like a rocket, and he knew he was dreaming. He opened his eyes, he thought, and saw the immensity of the galaxy and beyond.

In the morning, he woke smiling and ready to face the universe. "Nobody's going to con me!" —HAYDEN HOWARD

This Month in IF - - -

PRAISEWORTHY SAUR
by Harry Harrison

TRIAL BY FIRE
by James E. Gunn

And many others in the big February issue of IF — on sale now!
And watch for the March If — special Hugo Awards Issue!

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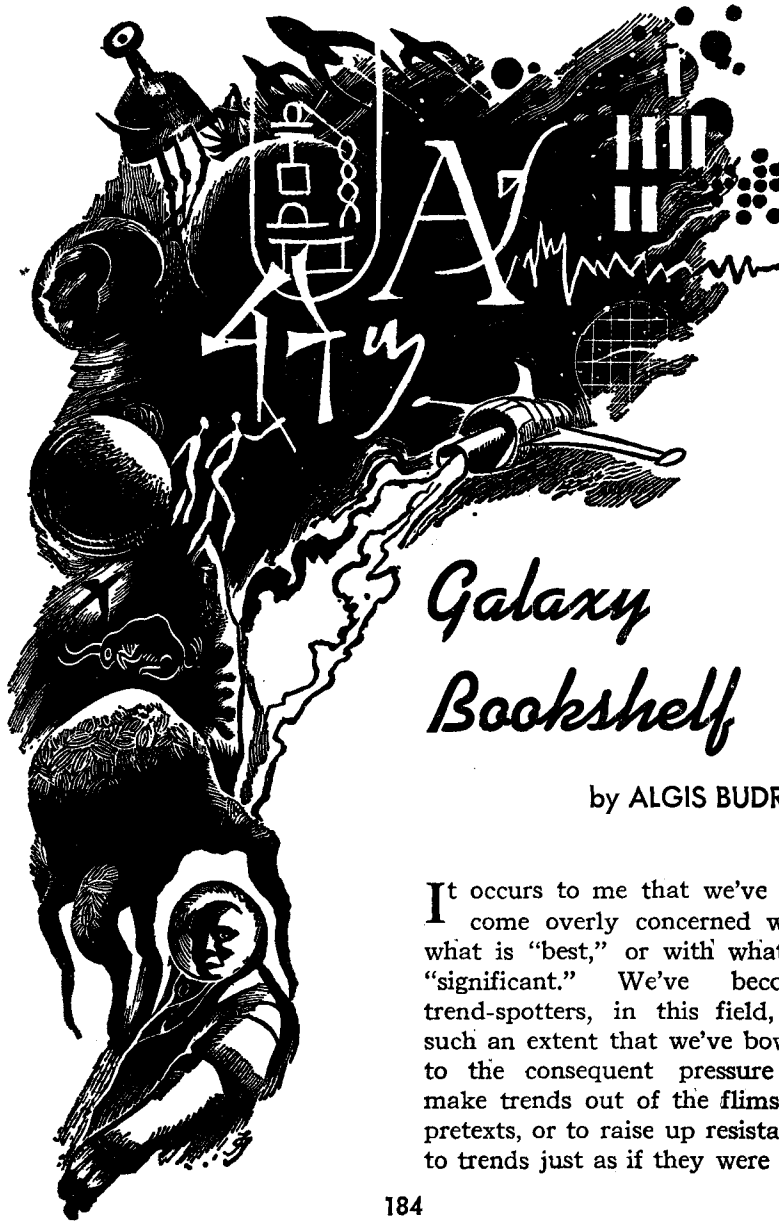

Galaxy Bookshelf

by ALGIS BUDRYS

It occurs to me that we've become overly concerned with what is "best," or with what is "significant." We've become trend-spotters, in this field, to such an extent that we've bowed to the consequent pressure to make trends out of the flimsiest pretexts, or to raise up resistance to trends just as if they were ob-

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jectively real. This cannot be good.

And yet it's natural. There is both the constant human motivation to isolate excellence (as a means of striving toward it), and there is our heritage from those first brave days in the latter 1940's when the earlier serious sf anthologists were searching out and reprinting stories that were, indeed, the best of the accumulated literature.

Nothing at all like that situation exists today. In some cases, "best" stories are selected, nominated, anthologized and given awards before the average reader has ever heard of them, let alone read them. In some cases, by the time he gets around to reading them, next year's crop is already undergoing the same swift process. The reader's voice and opinion are considered valuable, of course — it's simply a shame that they are so often behind the trend. Similarly, when an editor is slothful enough or prestigious enough not to jump into the annual trending contest at the first crack of the gun, he or she often makes up for this by selecting from sources so esoteric that the normal reader cannot begin to perceive whether even better examples might not lie neglected in darker corners of those same distant granaries. The acceptance of the best becomes a matter of a somewhat different sort of faith, but in either case what the reader is asked to do is to believe in a given editor or editorial panel; to accept the judgment of mere mortals in a situation so complex and so swiftly unfolded that only angels might confidently dance within its permutations.

Orbit 3, edited by Damon Knight for Putnam, at $4.95, for instance, is billed as "The Best All New Sf Stories of the Year." It happens to contain some remarkable work. But if it is to be credited for that, then it must also be faulted for not saying " . . . as selected by one man who didn't see everything, doesn't have time to read everything, can't pay in competition with all markets . . . " etc., or, more simply, " . . . as selected by one man."

Don't get me wrong, as the poet says. On any number of levels of abstraction, one cannot blame a commercial enterprise for making a commercial noise. But some day we shall be a little bit diminished by this plethora of pottage, and you know it, and I know it, and I just happen to be weeping a little in advance of the rest.

Having gone through all that, it's a pleasure to say that Richard Wilson's best story ever, to my knowledge, is in this book. "Mother to The World" is simply beau-

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tiful; a last-couple-in-the-world story which makes its points with unprecedented majesty because its author had the goodness, humanity and wisdom to say simply what many other writer have feverishly said in the now great number of years since we began admtting that Earthmen, as well as BEMs, were justifiied in desiring Earthwomen.

Yet the remaining stories are nowhere near as good as other, similar stories by these same writers.It may be true, but it seems hardly credible, that they themselves failed or will fail to do better within these 365 days. It is unbelievable that no one did better.

Nothing about this book could justify the high per-word price tag except the "best" tag. The latter is unjustified in fact, and so is the other; in the reprint paperback market, something like this relationship will then recur on its own scale, for the publisher will surely plaster the jacket with even more outrageous blurbs, there being a law about the weight of the adjectives being inversely proportional to the success of the editor's project.

There are those who find it relevent to say the editor doesn't write the jacket copy. Neither does the B-girl own the saloon. And there are those who say "Wait, next year's will be better," to which one can fairly reply with the comment that the present volume, then, is not only based on no reference to either the past or present, but is foredamned by the future.

"*Once And Future Tales*" collected from F&SF by its editor, Edward L. Ferman, is published by that brave enterprise, Harris-Wolfe & Co., at $5.95. And with an introduction by Judith Merril. (Some day, when I die, I will find myself standing on an underline between two parentheses. A mighty voice will thunder: "Budrys, prepare to meet thy Maker!", but just before I step forward onto the lava, some hovering assistant imp will lisp: "first, an introduction . . . ").

Be that as it will be,*Once and Future Tales* contains, besides a dull chapter from Judy's memoirs, Thomas Burnett Swann's "The Manor of Roses," Theodore Sturgeon's "When You Care, When You Love," William Tenn's "The Masculine Revolt," Rosel George Brown's "Fruiting Body," and "End of The Line" by Chad Oliver, along with several other stories you need not concern yourself about, they being imitations of bad stories.

I read this book principally because of "The Manor of Roses," which is accompanied by a stunning jacket painting, promising

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much on the story's behalf. (The rationale goes that if the story got this kind of response out of its illustrator, it must have something direct and concrete in it).

And "The Manor of Roses" is indeed an interesting story. Wrapped in the style of an historical romance set in England of the Middle Ages, the adventure it unfolds to its young protagonists are based on the supposition that mandrakes really were a problem in those days; that within certain limits there were times when you couldn't tell whether a person was animal or vegetable. Beyond that, the story endows the vegetable people with the terrible ambivalent need to either be adopted as humans, so that they may retain human softness and guise, or to take horrid revenges after they coarsen into creaking fibrous denizens of the soil.

Swann has created a story capable of the full range of human concern, from rough-and-tumble to deadly peril, from innocent chaffering to dewy romance, from theft to pathos. It's a shame he went beyond this, by framing it with a beautifully written but patly plotted, and totally superfluous, incidental story leading up to the "shock" ending I suppose he thought he needed to go out on. Whoever and wherever he is, he should know he was doing just fine until he tried to do his own editorial thinking.

"The Masculinist Revolt" is William Tenn in one of his discursive moods, simply telling the political history of the Masculinist party, from its inception at the hands of a codpiece-maker to its effective doom when Shepherd Mibs fired the shot that pierced the cheeks of Elvis Borax. And indeed, every word rings true, true, and mostly funny. All the inventions are inventions of detail, mind you — the central notion, that men might rebel against the increasing matriarchy of the U.S.A., is not new and was not new when people began applying it to, say, Nineveh. The inventions sometimes either flag or overextend themselves, almost certainly because Tenn had already told the story to his friends so many times that he was deathly bored with precisely its earliest and most outstanding ideas by the time he got to the typewriter. There is no particular reason for this story, except that Tenn was equipped to summarize the dynamics of political action and also is fully capable of generating absurdities, with great verisimilitude ad infinitum from any standing start he cares to demonstrate.

"When You Care, When You Love" is the Sturgeon of recent days, concerned with how the creations of his youth might work out in practice. This is a story

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which begins by depicting a love of fantastic intensity, with such conviction that one might well weep for its lack in oneself. Then it goes on to explore a means whereby sufficient desire and sufficient dedication might bring one of the lovers back from death. The entire rationale there is not only science fictional, it's brilliantly so. But having reached this difficult and often elusive point — which is the point a writer is interested in — Sturgeon lacks the energy to resolve the story properly for his reader. He has carried all his characterizations and prose structures remarkably well along the platinum thread of his narrative. He has for instance first taught us some science, then extrapolated it, then related it to overwhelming human emotion, which he also describes beautifully. He sets it down, pleased with himself, then recalls his audience, looks up, waves his hand at the componenents, and says: "There it is, folks," with a winning smile.

Sturgeon deserves to smile like a winner. But the reader deserves to be brought to the point of saying to himself, on his own behalf, "Here it is!" and the author should keep mum. Sturgeon knows that; he taught it to us. A facile structure of words, tacked on to counterfeit an objective meaning to everything that's happened to his characters heretofore, remains a structure of words, not of events, and as Sturgeon also knows, it's events that are life. Words are merely the best present tool we have to grapple life with.

What I am saying about this book and these stories is that they're self-conscious. For one reason or another, this book, like any of these stories, does not act as a catalyst to the imagination. Instead, it seeks the approval of the intellect. Seeks it well, seeks it winningly, but should it? Should we all be so damned self-conscious?

A young writer — Bob Shaw is a young writer, whereas, say, Algis Budrys, who is approximately the same age, is an old writer — should do what Bob Shaw has been doing; working his way through stories. He should not think much about what he is doing, or why, or if he does he should not take up the reader's time with evidences of these purely personal concerns. The reader has paid his money and demonstrated a certain willingness, but it is not a willingness to have the writer move in with him. Unless he be working for a specified audience of people who are interested in various aspects of his technique — that is, unless he be teaching the craft — to

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people who have in some manner paid tuition fees, as distinguished from the great number who buy tickets to stories, he has to distort both himself and those who deal with him, or else he has to be distorted by them, each time he does anything but present his story as distinguished from himself.

These are not statements of my opinion; they are statements of fact, and I hate to keep harping on them, especially since I then find my opinions quoted favorably by people who think you can legislate creativity, almost as often as I find them attacked by people who believe literary criticism is a branch of press-agentry. But I must harp on them in cases where they explain, first of all, talented but somehow less satisfactory writers.

The general quality is most often called by the term "story-telling ability," and it has now gotten so scarce, in the minds of some people, that even a curmudgeon like Lester del Rey, who really knows better, is moved to give him overblown praise on the covers of a merely adequate novel.

Only Keith Laumer, of all those pressed into service as shills by Terry Carr, speaks an undeniable truth about *The Two-Timers*, an Ace Science Fiction Special. "Smoothly written, immensely readable," he says correctly. "Painfully good," says Harlan Ellison. "A damned fine book," says Lester.

No. No. It is a reasonably well told narrative about a man who wants so much to bring the dead back into his arms that he succeeds in crossing time, where he does indeed find his beloved — in his own arms, he being still married to her in that parallel world.

Shaw brings to this intensely workable situation all the range of his sympathy for the human detail — the beloved who is not wholly lovable, the hero who is just sufficiently flawed, the villain with the fatal seeds of heroism in him. But he makes serious mistakes, and one can see them.

Some of them are mistakes of detail, apparently stemming from the error of deciding to set this book in Montana. Not for one minute can anyone seriously believe that Shaw has seen Montana, or a Lincoln sedan, or an American policeman, a park in a city of the western U.S.A., a suburban house, a lakeside cottage in the Rockies, or any of those other things he names here in this book, while actually describing something that probably is in fact Manchester. He has never heard an American talk, or if he has, he very properly refused to believe it.

The sub-notion of warping of

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the entire universe by the passage of one body out of it, and the warping of another by the passage of a body into it, is just so much barnacle. Not that Jack's passage into John's world might not somehow have such an effect, so that the Earth spins farther away from the Sun, the Sun flies off at a tangent, and the entire universe begins to run like a cheap stocking. But this seems hardly likely, and one doesn't even need to bring in Continuous Creation as a hypothesis that would permit Jack to thrash about in perfect physical freedom; all it means is that somewhere one has to pack a few hydrogen atoms a little bit closer together in some interstellar gas cloud tens of tens of tens of thousands of cubic light-years in extent. More important, what has it to do, really, with Jack and you and me?

It's a rather good story, and I recommend it. But Shaw is trembling on the verge of teaching himself to edit, to inject the commercial thing, to introduce the visible signs of conscious effort. Jack and you and me are the same in Manchester as Montana; love is all, ennobling and destroying; the universes within the soul totter sufficiently loud so that we may usually leave God's handiwork undisturbed. I will admit to being impressed with Shaw's talent to the extent that I'll swallow his hypothetical time travel *via* migraine headache. What the hell. But I'm not impressed with it to the extent that I feel it outweighs the importance of the author. By plastering this book over with praise, the editor has preconditioned the audience response. Since the book is not that good — and I can't believe Terry Carr thinks it's that good — he has deliberately preconditioned it toward distortion. By lending themselves to the extravagant praise Terry wanted to have, del Rey and Ellison have participated in a situation based on some consideration other than objective appraisal. Ellison loves to write critical phrases like "The writing is exquisite. It knocked me cold . . . " because there's a definite charm to writing like that. Del Rey loves a good story and nurtures storytellers. But he can't really have "finished with a feeling of complete satisfaction."

Come *on*. If you praise a mediocre book, because you want to sell more copies, or because you like writing blurb copy, or because you sincerely believe the writer deserves good things, what you are doing is helping to perpetuate the book's errors. You stand in danger of encouraging a writer you like to inject cosmic sf elements into a human story, to that story's inevitable diminu-

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tion of impact. You stand in danger of encouraging a man to think of gimmicks, of driving him directly into the arms of a seductive way of life in which things are made so pleasantly flattering that one loses the guts to actually put out any unusual work. The process is plain to see, and always has been. And where it starts, and who it starts with, is not in the obviously sycophantic and ponderous extravagances that every interesting new writer encounters and can recognize; it starts with the well-intentioned distortions of those he respects and who often wish him well.

—ALGIS BUDRYS

★ ★ ★ ★ ★

FORECAST

At the 1968 Boskone (short for "Boston Science Fiction Conference"), the guest of honor was Larry Niven, and his speech was a technological evaluation of the phenomenon of teleportation — not so much whether it exists or not as an examination into the engineering aspects of it, if it exists at all. We heard the speech, and liked it well enough to ask Niven to go into the subject more deeply in the form of an article for *Galaxy*. Which he did. The result, entitled *The Theory and Practice of Teleportation*, will be in our next issue.

After all, even a psi phenomenon must somehow or other come into contact with the conservative, relativistic universe of known physical law. Conservation of momentum, for example: What happens if you teleport out of a speeding car? Conservation of energy: If you teleport from the top of a mountain to a valley, where does the potential energy of the change in height go? Good questions; and Niven has some pretty good answers for them as you'll see next month.

At the same time you'll be seeing the first installment of a new Keith Laumer novel (and, in our estimation, his best yet) *And Now They Wake*. A handsome and talented lady named Anne McCaffrey, proud in the possession of the first Hugo ever won by a female science-fiction writer, is with us with *The Weather on Welladay*. And if we squeeze it in, we hope to have an unusual novelette by a mathematician entitled *Godel Numbers*. What's a Godel Number? Well, for one thing it is a way of conveying any message — any message at all — by writing down a single (admittedly rather large) number, whether the message is "Dad, send cash" or the Encyclopedia Britannica.

See you then. .

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GALAXY'S STARS

Algis Budrys became a fan of science fiction while he was working on a chicken farm and going to high school in New Jersey. If that sounds like the story of a young American farm boy, the implication is the complete opposite of the truth. His background is urban and international. He was the son of the late Lithuanian Consul General in exile to the United States, which made him a resident alien. But even if he had been an American citizen, he would have been unable to vote when his first story was published in 1952 — because he was too young. Nevertheless, this story and others by him that soon began appearing were remarkable for their mature approach to the goals and aspirations of the coming age of space in America. Some of his background does show in his novels, however. *The Falling Torch* depicts the complexities and confusion of real diplomacy in exile; and *Who?* is a speculative psychological novel against a cold-war situation that is convincing and excellent in detail.

Except for his brief early farming experience, all of his work has been connected with some aspect of writing or publishing. He worked as an editorial assistant on *Galaxy Magazine* under Horace L. Gold. After getting more editorial experience at a small book publishing firm, he returned to free-lance writing. He moved to Chicago when he was offered the position of chief editor for Regency Books. As editor there, he was busy encouraging other authors to write science fiction for him while he was busy doing a difficult political biography — his first serious venture into nonfiction. When Regency Books became inactive, he transferred to the staff of *Playboy*.

At present, he is engaged in public relations work, mixing that type of writing with critical work for his regular *Galaxy Bookshelf* column. He and his wife, Edna, share a house in Evanston, Ill., with their four handsome and active sons. Most of his free time is spent pedalling around on a ten-speed bicycle, often accompanied by one or more of the boys. When he talks of the wonders of technology, it's hard to

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tell whether he's discussing a new rocket booster or the virtues of some obscure bicycle part. Fortunately, he still finds time to turn out an occasional piece of fiction.

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James Blish is a man who seems to be a complete contrast to himself in almost every way. A few years ago, he rode to work on a high-powered motor scooter, scowling out from a helmet and goggles at the stupidity of motorists around him. Then he would doff the helmet, put on his conservative Homburg, and appear as any rising young business executive.

As a critic, he can be both the least patient and most patient of human beings. Some of his critical essays (under the name of William Atheling, Jr., or his own name) were so savagely insistent upon a high level of craftsman ship that several writers were afraid to write again. Yet at the Milford Workshop sessions each year, he is the most patient encouraging of teachers, gentle as he pinpoints an error and quick to recognize any sign of talent. He has a persistent tremor to his hands, and his smile seems diffident. But when an argument starts, he's in there with tooth and claw, and the smile is suddenly that of a tiger about to make a killing.

As a writer, he has covered the field of fiction more thoroughly than most — from pure hack sport stories to science fiction that is acclaimed for its philosophical daring and technical excellence. He has no use for *psi* stories; yet his *Jack of Eagles* was perhaps the wildest and best-explained of all wild talent novels. His Okie stories were worked out with exemplary realism — yet the final story, *The Triumph of Time,* wound up in a blaze of universe-destroying and multi-universe creation; he likes his stories to be tied up neatly at the end — and yet that novel left a dozen questions to tantalize the reader. His *Case of Conscience* used space travel as a background to examine an ancient problem of heresy on Earth — and won him a Hugo for the best novel of 1959.

At present, he's living in an apartment in New York City with three cats and a wife; the wife is the artist, Judith Ann Lawrence, whose work has so well illustrated many of Robert Silverberg's fact books. They're planing to move to England some time in 1969, where Jim will be able to devote full time to his writing. Hopefully, that should increase his already high output of excellent fiction, and bring us still more James Blish stories.

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(*continued from page 8*)
no more than an abstraction of a real thing; in the process of abstracting, kinds of meaning were inevitably lost; the Laputan would converse only by pointing to real objects, pretty much limiting his conversation to nouns and verbs and not too many of them. Dean Swift invented this particular loonie as a satire against some primitive semanticists, and what he meant us to understand from it is true: we can't operate without some kind of abstractions in communication, and it's silly to attempt to avoid them.

But it's worth while to try to remember now and then what the abstractions mean. Especially when we play the game of polar opposites: Sure, all numbers *are* either odd or even; but does that imply there is really anything that odd numbers have in common apart from the fact that they are not even? Sure, some nations practice what we know as democracy and others do not; but does that mean that all of those which don't are natural allies of each other? Or enemies of those which do?

Perhaps those implications can be shown to be so in fact . . . but how seldom we try to test them; and how often we find ourselves acting on conclusions that result only from words. . . .

Which is a long way from where we started this editorial. Getting back to number theory, we would like to acknowledge that our particular thoughts on this subject at this time were sparked by a first-rate new book called *An Adventurer's Guide to Number Theory* by Richard Friedberg (McGraw-Hill).

Over the years, we've discovered some interesting correspondences between number theory and science fiction. One is that in both cases people respond vigorously; they are turned on, or turned off, but in either case decisively.

If you are one of those who are repelled by discussions of numbers, forget it; this book isn't for you. But if the subject interests you, the book will delight you. Friedberg explains and illustrates as he goes along, and the result can fill a good many hours. If you chance to find yourself as a member of the crew of a long-orbit space voyage, this book and something to scribble on is guaranteed to keep you occupied as long as you like; you'll still be trying to prove Fermat's last theorem, or to understand why the sum of the first n odd numbers is always n^2 by the time the rings of Saturn heave into view. . .

THE EDITOR

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The BEMs in your neighborhood

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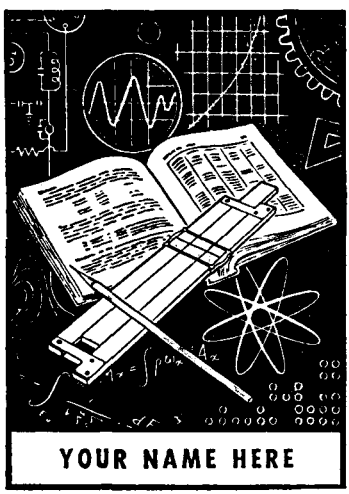

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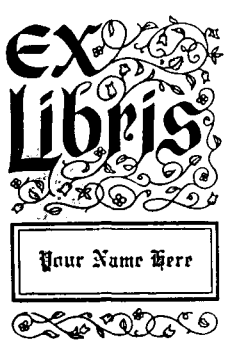

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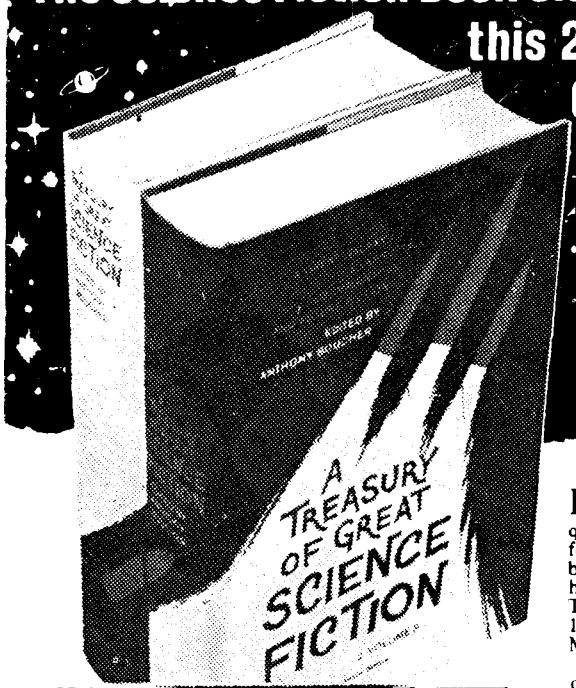

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